Monthly

A Reference for Buyers

HINGHOOCKS
MACHINE
TOOL
BLUE BOOK

25,000 Controlled Circulation

Published By

508 So DEARBORN ST. CHICAGO

Reduce motor inspection~ its easy!

You can cut a big chunk off your inspection costs with Reliance ball-bearing motors on the job. Once in 12 months you add a little grease. Compare this with your present costs for toting oil cans. Labor, the big thing, is less; lubricant is less.

Air gaps needs no inspection—the rotor can't drop even in case of bearing failure.

It's easy to save this way and it's easy to prove that you can. Try it with a Reliance Motor.

Bulletin 400 gives details

Reliance Electric & Engineering Co.

1050 Ivanhoe Road, Cleveland, Ohio

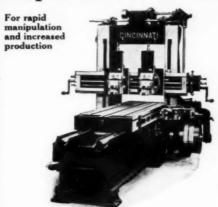
Branches:

Boston New York Sy Cincinnati Detroit

Syracuse Philadelphia Buffalo Chicago Pittsburgh Birmingham

RELIANCE MOTORS with Ball De Bearings

CINCINNATI Rapid Traverse Planers



WRITE for our "Rapid Traverse Planer Bulletin" for the complete description of these high-production planers. Rapid power traverse, forced lubrication, box arch, box table, herringbone gears, etc., are only a small part of the story; and it's interesting.

e

OR WRITE for the complete Catalog of Cincinnat Planers, which are built in sizes from 22" to 120" wide, for rapid manipulation and increased production on every conceivable kind of planer work. If you have planing to do, there's a "Cincinnati" adapted to your needs.

"Tomorrow never comes." Better write today.

The Cincinnati Planer Co.

Cincinnati, Ohio, U. S. A.

New "American" Oiled Shaper

The WONDER SHAPER of today for Production, Range, Accuracy, Shop Economy, and Profit



16-Inch Heavy Pattern 20-Inch Standard Pattern 20-Inch Heavy Pattern

24-Inch

Standard Pattern

24-Inch Heavy Pattern

28-Inch Standard Pattern

32-Inch Standard Pattern

32-Inch Extra Heavy Pattern

36-Inch Heavy Pattern

Points of Excellence

Tremendous cutting power; unparalleled rigidity; permanent accuracy; automatic forced lubrication; multiple splined shafts; Timken roller bearings; multiple disc clutch and brake; V-type ram; improved table support; helical gears, alloy steel, hardened; tu-piece bull wheel; centralized control. Accessories and attachments for every conceivable kind of shaper operation.

You are interested in mechanical progress. Glad to post you on this great leader in shaper design, without obligating you in any way. Drop us a line.

The American Tool Works Company

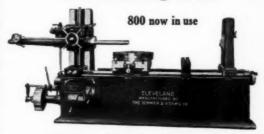
Cincinnati, Ohio, U.S.A.

LATHES

RADIALS

SHAPERS

A Production Machine For Reducing Costs



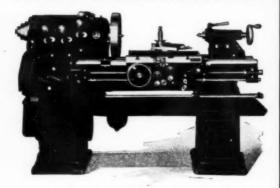
The No. 1 Cleveland Horizontal Boring, Drilling and Milling Machine

- It is only by the employment of the latest production machines that output has been increased and prices lowered, in spite of high wages.
- In the war of competition it's the survival of the fittest—
 of the manufacturer who can turn out his product
 second to none in quantity, quality and price.
- In hundreds of plants the Cleveland Horizontal Boring, Drilling and Milling Machine is materially increasing production and reducing costs over old, obsolete methods. Investigate what it will do for you.
- Furnished with a length of bed, platen, column and outer support to meet requirements, and with numerous attachments for varied purposes.

Write for specifications and tell us your needs

The Sommer & Adams Company 18512-18515 Euclid Ave., Cleveland, Ohio Modernize Your Lathe Equipment with

Monarch Ball Bearing Helical Geared Head Lathe



Monarch Helical Geared Lathes combine speed (productive capacity), smooth work (no gear tooth marks), noiseless operation and an ease of handling (time saving), that has never heretofore been obtained.

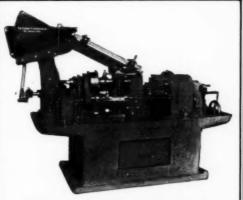
The Helical Gears have 3½ teeth always in mesh. In operation they are noiseless, smooth and powerful.

Greater production is insured, because of the higher speeds obtainable and of the many operating conveniences.

Glad to tell you how these modern lathes, from 14 to 30 in., increase production; how they are built; how the Monarch Dual-Control and other features save time. Write—

The Monarch Machine Tool Co.

Sidney, Ohio, U. S. A.



Economy Combined Automatic Bolt and Cap Screw Pointing and Threading Machines

Now manufactured in four sizes:

1" Machine— Capacity 1/2" to 1" dia., 11/4" to 51/2" long.

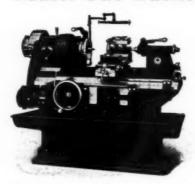
3/4" Machine— Capacity 3/4" to 3/4" dia., 11/4" to 51/2" long.

%6" Machine— Capacity 1/4" to %6" dia., 11/4" to 41/2" long.

3/8" Machine— Capacity %s" to 3/8" dia., 1" to 4" long.

The Economy Engineering Company WILLOUGHBY, OHIO

The LeBLOND Multi-Cut Lathe



LeBlond No. 9 Multi-Cut Lathe

The Multi-Cut is a semi-automatic lathe adapted to combined turning and facing cuts using multiple tools. The set-up is very simple and quickly accomplished, there being no cams to consider. The machine can therefore be used profitably on relatively small lots.

Our complete catalog describes the several sizes in detail.

We will gladly send it to interested parties.

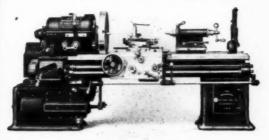
THE R. K. LeBLOND MACHINE TOOL COMPANY

CINCINNATI.

OHIO

Bradford "All-Geared" Lathes

14" to 48" Quick Change Gear



18" Motor Drive, with Apron Control

Let Your Experts Decide

BRADFORD "All-Geared" Lathes are built along entirely new lines. We believe they excel all others by so great a margin as to remove all doubt. They combine enormous driving power with smooth running and ease of control in a manner never before accomplished. They turn out better lathe work and more of it. As to proof—we shall be glad at any time to submit the facts to your own mechanical engineer for decision.

Write for our "All-Geared" Lathe Bulletin. You will find it both interesting and instructive as a study in advanced design. It may suggest methods of greater lathe production and worth-while economies. Your copy is waiting. Your address, please?

The Bradford Machine Tool Co.

Builders of Quality Lathes from 14 to 48 inches

Cincinnati, Ohio, U.S.A.

Established 1840

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Ideal Shaping and Slotting With the "RHODES"



3½ in. Slotter Stroke

Specialized for small work, it handles anything within its capacity with greater facility and economy.

Accurate to the highest degree—a high grade machine tool in every sense of the word.

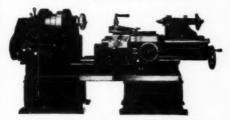
Why not investigate today? You'll be glad you did.

Ask your dealer or write for CATALOG H22

The Rhodes Mfg. Company 944 Park Road, -: Hartford, Conn.

One Lathe for Every Job

Without Tearing Down or Setting-Up



Rahn-Larmon 188/368 Extension Bed Gap Lathe

There is no reasonable limit to the variety or the amount of work that can be done on a Rahn-Larmon Lathe without special setting up or tearing down—that is why Rahn-Larmon Lathes are so widely used in railroad and jobbing shops.

This versatility is combined with such stoutness of construction that it can absorb the shocks arising from the heaviest cuts.

A Rahn-Larmon Lathe cuts down your equipment needs, gives you the ultimate in both accuracy and service, and increases production.

Tell us your requirements and we will show you how to cut your costs

The Rahn-Larmon Co.

Cincinnati, Ohio

Something No Workman Can Do

It requires the precision of a special machine



The

Grand Rapids Tap Grinder

Grinds taps so that every flute has exactly the same angle of taper with just the proper clearance.

This is something no workman can do in grinding by hand.

It saves taps, saves time and insures perfectly tapped holes.

SAVES TAPS. It saves approximately one-half in the cost of taps. It saves the wear of too frequent grinding, because the taps stay sharp twice as long.

SAVES TIME. It saves half the grinding time. It saves tapping time, because the taps cut at higher speeds. It saves assembling time, because nuts, studs, etc., will fit.

INSURES PERFECTLY TAPPED HOLES, because the taps are ground right and with mechanical precision.

Write for the Tap Grinder book.

It tells how to reduce tapping costs while producing more satisfactory work.

Gallmeyer & Livingston Co.

342 Straight Ave., S. W., Grand Rapids, Mich.

Manufacturers of Grand Rapids Drill Grinders, Cutter and Tool Grinders and Tap Grinders. What do you need?

12

Cutter and Tool Grinders

For All Classes of Work



The Nos. 10, 11 and 12 give a range of sizes that will take care of any kind of cutter and tool work as well as light cylindrical grinding.

Let us recommend the proper sizes for your work

LANDIS TOOL COMPANY

Waynesboro, Pa.

New York Office: 2907 Singer Bldg. Detroit Office: 5928 Second Blvd.
Chicago Office: 618 W. Washington Blvd.



Ready for Heavy Duty Day After Day

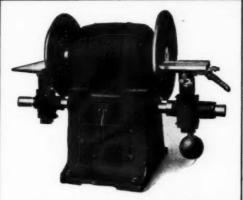


The "N" Series Taylor Welder is built to give service-unending, uninterrupted, dependable and economical service! It knows no word as "quit" unlessyou wish to have it do so. The Taylor "N" has countless features that render super-service at the lowest cost and insure maximum twenty-four hour production with minimum labor, effort and upkeep!

Write for interesting literature on the Taylor line of spot welders!

THE TAYLOR WELDER COMPANY WARREN, OHIO, U. S. A.

Type SPOT WELDERS



For economical grinding of flat surfaces—

GARDNER DISC GRINDERS!

46 standard sizes and types, and an endless number of special machines—for an unlimited variety of work.

SEND FOR CATALOG!

GARDNER MACHINE COMPANY

Near Wheeler Ave.

Beloit, Wis., U. S. A.

Edlund Sensitive Drill

With Its Built-in Motor



Produces this Result

It will bore any number of blind holes with such precision that there will be less than 0.004° variation in depth.

Surely such accuracy can only be gained thru skilled design and perfected construction.

Here are a few of the features that make for its superiority:

Motor is bolted to back plate in such a manner that all pull is removed from motor shafts.

Spindle and cone pulleys are so balanced that extreme sensitiveness is assured, and vibration is obviated.

Speed adjustment can be made without stopping motor.

EDLUND Production Drills are furnished with belt or motor drive single or multiple spindle—with or without power feed. They can be counted on to handle your drilling requirements with unsurpassed precision and efficiency, and to give unvarying service for years.

Let us send you full mechanical details; better still, put your drilling problems up to us-we're specialists

Edlund Machinery Co., Inc.

Cortland, N. Y., U. S. A.



A Single Spindle Footburt Sipp Sensitive Drill

Made in three sizes of single and multiple spindle models

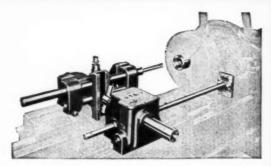
More holes with this machine

Why? Because you can change speeds in two seconds or belts in ten seconds—because the automatic idlers keep the belt pulling to capacity at all times—because the full ball bearing equipment and accurate machining gives a smooth, fast cut.

Write for No. 650 Folders

The Foote-Burt Company, Cleveland, O.





....oil-groove bearings like these—four a minute!



The Cisco Oil Grooving attachment is handily attachable to any lathe 16 to 20 inches inclusive; cuts a single or double oil groove of figure eight type inside or outside the bearing, the style and depth of groove being readily changeable by the operator.



Effective and efficient on small or large quantity production. The range of the regular machine is 6 inches in stroke length, but this can be length-ened depending upon the size machine mounted on. The diameter of the work to be oil grooved, is not controlled by the attachment, but by the size of the machine and chuck used.



The time required for putting an oil groove in a brass bush 2 inches long and 2 inches in diameter, in and out of the machine, is about four pieces per minute.



This is the most convenient and economical device available for oil grooving. It is a time-saver and money-maker wherever installed. Write for bulletin and prices.

The Cisco Machine Tool Co.

1700 Elmore Street,

Cincinnati, Ohio

Threading 1200 pieces per Hour

These brass wing screws shown are being threaded on our



Standard High Speed Tapping Machine



Let us show you what can be done on your work

Leland-Gifford Company, - Worcester, Mass., U.S.A.

BRANCHES
BOSTON CHICAGO CLEVELAND
DETROIT NEW YORK
PITTSBURGH ROCHESTER

Hendrie & Buldouff
F. E. Satterlee Company
Colcord-Wright Melly. & Supply Ca.
Herberts Machinery & Supply Ca.
F. F. Barber Machinery Co.
Toronto

LELAND GIFFORD

= Demco.

The Greatest Hole Makers ever Produced

DEMCO

High Speed Sensitive Drilling Machines

With a spindle that automatically absorbs its own wear a spindle without lost motion. No lock nuts to adjust. All wear is confined to the ballbearings.

> For sale by machinery dealers in all principal cities

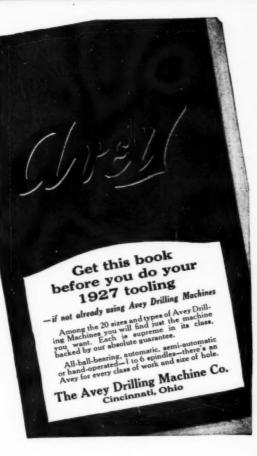


Model-Dil, Single Spindle Floor Type.

DEMCO DRILLS-Cleveland, O.

Division of

Merit Oil Equipment Co., Cleveland, O.





No. 52—Built in Seven Sizes **BELOIT**Combined Power Punches and Shears

Series 51 to 56

The Beloit Combined Power Punches and Shears offer an unequalled combination of simplicity of design, construction, range of capacity, and moderate initial cost.

Invaluable in any plant for punching, shearing and fabricating steel bars or structurals.

An indispensable equipment for the manufacture of automobile springs and bumpers.

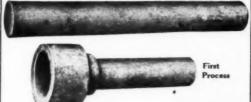
Tell us about your Punching and Shearing requirements.
Our line is extensive, and we have a Beloit Machine for your work,

Send for our new catalogue No. 11 which describes the Beloit line of Punches, Shears and Bending Rolls.

Hendley & Whittemore Co.

100 S. State St., -:- BELOIT, WIS.

THE BAR







Finished "AmForging." Note by cross section how little material must be machined away.

100% PRODUCT!

No Flash! No Tong-hold! No Draft! No Holes to Bore! NO WASTE AT ALL!

Our customer benefited greatly by this amazing forging record. Our engineering department is at your service. Where we have helped others—we can help you.

Send for our descriptive booklet

American Forge Co. 2633 So. Hoyne Ave., Chicago, Ill.

BARNES Adjustable Arbor Presses SAVE TIME



The cross head can be instantly dropped to the work, locked in position, and with a few turns of the center screw (ratchet operated) the required pressure can be applied.

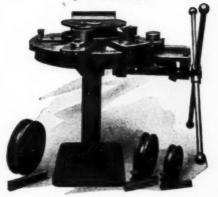
Made in three sizes—the largest admits 36 inches between screws and has a capacity of 50 tons pressure.

Write for full information

Established 1872

W. F. and John Barnes Co. Rockford, Illinois

A New Horizontal Pipe Bender By PEDRICK



Universal satisfaction for the past 20 years has been the keynote of our success with bending pipe.

Recently we have made **two** radical departures, viz., the horizontal table and the improved bending principle, which offers decided advantages in **Time-saying**. Convenience and Superior Work.

Iron, steel, galvanized and copper pipe are bent cold and unloaded on the radii of the rolls. For 2 and under.

We have a Bulletin awaiting for you. SEND FOR !T NOW.

Pedrick Tool & Machine Co. 3644 N. Lawrence St., Philadelphia, Pa.

Manufacturers of Cylinder Boring Bars, Portable Millers, Crank Pin Turning Machines, etc.



Performance

The motor you install—will it measure up to its responsibility? Are you willing to take for granted the dependability of an ordinary motor? Or—do you follow the safer policy and demand the extra assurance you get only with a quality-built motor?

An increasing number of machine tool manufacturers, who are conscious of the **better** motor's influence on machine tool performance, are now standardizing on F-M **Ball-bearing** Motors.

Examine this motor point by point and you will readily see why! You, too, will recognize it as "the motor that matches in precision and performance the fine machines it drives."

Write for F-M Ball-bearing Motor facts and figures.

FAIRBANKS, MORSE & CO., CHICAGO
28 branches in principal cities at your service

FAIRBANKS-MORSE

Pioneer Manufacturers of

ball bearing motors



AEA30.8

TRANSMISSION

Let this Handbook Help You

HERE'S a valuable book that will help solve your transmission problems.

The Falls Handbook 18 includes engineering data—specifications—layouts—and general power and transmission instructions.

This book belongs on your desk. It will be cheerfully sent on request, without obligation.

Send for it today



The Falls Clutch & Machinery Co.

NEW YORK 206-208 Fulton St. CHICAGO 625 Monadnock Bldg. BOSTON 52-58 Purchase St.

Clutches—Shafting—Couplings—Collars—Pulleys and Belt Drives—Sheaves and Rope Drives—Bearings—Hangers—Belt Tighteners.

27

No. 16 Bench Punch





Operator Works in Front of Machine

Ball Bearing Punch No. 20

Capacity, 1/2" thru 1/2" iron. Weight, 20 lbs. Drop forged. Heat treated.



NO EQUAL

Many are used in erecting steel buildings by punching holes in monitors of roofs without the aid of any scaffolding. Will rivet as well as punch holes.

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Write Us. Other sizes.

WHITNEY METAL TOOL COMPANY 95 Forbes Street Rockford, Ill.



With This

1-Man 4-Post Screw Press

80 tons pressure

Its superior convenience
makes it possible for one man
to fit more dies
than two men can do on
any other type of machine.
Abundant room between
bed and ram insure perfect alignment of the
punch and die. Each of
the 4 sizes is rigid, and

the 4 sizes is rigid, and powerful enough to shear in any die within its dimensions.

Table 20"x36" Also 3 smaller sizes

Type BB

Surface Grinder

Is accurate and powerfulruns without chatter. Both feeds have graduated dials. Equipped with latest improvements.

Details and price on request

JARECKI MACHINE AND TOOL CO.

Department A GRAND RAPIDS,

MICHIGAN





COR THIRTY YEARS the railroad shops all over the country have continued to buy these timesaving expanding mandrels. If you have n't used them, write us and we will send any size on trial.

W. H. Nicholson & Co., 117 Oregon St., Wilkes-Barre, Pa.

Eliminating Vibration



Canedy-Otto

Sensitive Bench

Drill No. 29

Drills to a 10" center. Capacity 36" diameter. Run of spindle 2½". Run of table 7". 110 V.-60 Cy.-1 Phase 1100-2200 R. P. M.

\$44.00

Ready for the Job

Comes complete with Toggle Switch, Cord, Socket, Belt and Chuck The vertical type ball bearing motor with which the Canedy-Otto No. 29 in equipped is attached in such a manner that the proper tension is constantly exerted on the belt, preventing loss of power. This design eliminates the use of gears and operates at high speed without noise or vibration.

All parts are accurately machined and balanced for high speed work. The spindle is so ground and fitted with ball thrust bearing and chuck that true running is insured.

Canedy-Otto Manufacturing Company

Main Offices and Factory—Chicago Heights, Illinois
New York Branch
407 Broome St.
carried at branches
955 Folsom St.

The Accepted Standard In Dust Collecting

The Rarefied Dust Collector

To substantiate the above fact, ask one of our users, such as the Westinghouse Company—equipped with 34 "Rarefieds," or the Western Electric, at present using 23—the Solvay Process, with 26; we could refer you to a score of big users. When the "Rarefied" has proved itself in this fashion so conclusively, there must be good reasons—here they are:



The suction never varies.

Assured collection of all heavier than air dust.
Collected waste automatically discharged.
No hand cleaning.
No meshes to fill or clog.
No moving parts to get out of order.
Inner walls are interchangeable.
No cutting out of fan.

A 40% saving in power may be effected.

Repair costs are held at zero.

Aren't these reasons conclusive? Think it over and write

THE KNICKERBOCKER COMPANY JACKSON, MICH.



New Type Machine

Rotary Filing Grinding and Polishing

Type RF-M 4. 4 H. P.



For Die Makers

All Kinds of Metal Finishing

Of

Various Shapes and Sizes

A Machine-

For

Many Purposes

Attach to the Lighting Circuit

Attachments



EQUIPMENT

Ball Bearing Hand Piece. 8 Assorted Rotary Files.

9 Assorted Grinding Wheels.
1 Rubber Polishing Drum.

Mochine Complete as Illustrated

N. A. STRAND & CO.

Manufacturers

5001 No. Lincoln Street CHICAGO



VOLUME PUMPS



MOTOR DRIVEN UNITS % to 5 H. P. 5 to 75 G. P. M.

FULFLO delivers coolant in volumes which

GRINDER PUMP

promotes efficiency in cutting tools.

The full, copious flow from the Fullio is needed to make the best tool, with the best coolant, most effective.

FULFLO does not clog, therefore it always

works. It's the trouble proof pump.

No machines stopped to unclog pump. All the chips you can get into it pass through without harm. FULFLO has longest life because its only pumping part does not wear.

MANUFACTURED BY

FULFLO SPECIALTIES CO.,

BLANCHESTER, OHIO

PEERLESS

SURFACING MACHINES

for

Grinding and Finishing

Flat Work



Larger Machines in Both Horizontal and Vertical Styles

SEND FOR FOLDER

PEERLESS SURFACING MACHINE CO., Inc. TROY, N.Y.

Sharpening One Saw A Day The Machine Pays For Itself In Less



and smoother.

MODEL E

Salvages all Cold, Milling, Slitting and Screw Slotting

THE WARDWELL MFG. CO.

Model A.2 Hard Tempered Metal Cutting Band Saw Grinder

Cleveland, Ohio Specialty Manufacturers of the largest line of Saw Filers made in the U. S. A.

108 Hamilton Ave.,

Speed in Quantities or Varied Lots

The Davis Keyseater



Cleveland, Ohio

OS Hamilton Ave.,

For cutting keyways in pulleys, gear blanks, crank handles, etc.

And for oil grooving and work of a similar nature

Whether you want quantity production of standard parts, or versatility to meet varied requirements, the Davis gives satisfaction. It takes every job as it comes, performing it accurately and with speed. The Davis is designed with such operating convenience that there are no complicated parts to get out of order.

Write for a complete description of this productive, low-cost tool

Davis Keyseater Company

255½ Mill St., Rochester, N. Y., U. S. A.

Lower Your Keyseating Costs

With the NEW Catlin No. 1



Rapid
Simple
Durable
Efficient
Accurate
Economical

The Catlin Keyseaters are popular because they are profitable—they have made good in machine shops of every size, as well as automobile plants, government shops, navy yards and many foreign factories.

Nos. 0, 1 and 8 Keyseaters have the crank motion, while all other sizes have the rack and pinion drive.

All Catlins are thoroughly efficient, and help to lower shop costs. The picture shows our No. 1 Keyseater.

Let us send you the large folder, which gives full details of construction and operation, and also some

Very Interesting Production Records!

Chattanooga Machinery Company

2401 Bennett Ave., CHATTANOOGA, TENN.

Genesee Hollow Mills

With Adjustable Replaceable Blades Are Productive, Accurate, Economical



PRODUCTIVE—because their seven sizes cover the entire range from \(\frac{1}{9} \) to 2\(\frac{1}{2} \), and machine all sizes within their capacity to 1000ths of an inch.

ACCURATE—because the hollow mills cannot change in size or clog with chips as do solid tools. They can be ground to any angle required to point work or turn sharp tapers.

ECONOMICAL to buy, because one Genesee Hollow Mill covers several sizes—economical in upkeep, because they outlast from five to seven ordinary tools; then too the blades are replaceable at a small cost—economical in operation, because they give a maximum efficiency, cutting up to 15st a minute in steel, or to capacity of machine.

Send for detailed information

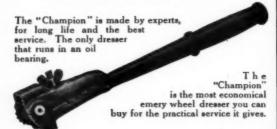
Genesee Manufacturing Co., Inc. 141 North Water Street, Rochester, N. Y.

Manufacturers of Genesee Rapid Production Tools.

Est. 1908

"Champion" Emery Wheel Dresser

Outlasts a Dozen Cheaper Dressers



The cutters are made of a special steel, heat-treated and tempered by a special process.

The sleeve, furnished with each set of cutters, revolves on the spindle and the cutters in turn revolve on it, providing a more perfect bearing for the cutter wheels.

The patented **spindle bearing**, which is made of steel and thoroughly hardened, serves as a bearing for spindle and a guide for cutting wheels, and it cannot turn in the handle; makes wobbling impossible.

The patented *handle* is heavy and strong, designed for long service, efficiency and economy.

The patented handle cap eliminates the old-fashioned set screw and serves as an upper-clamp for spindle bearing. Further, there are no moving parts. On account of absence of wear, the life of handle and handle cap is indefinite.

Our Catalog also describes

Champion Tool Holders, Champion Expanding Mandrels, Machinists' Vises and Clamps, etc., and our large line of practical, hard-to-beat Shop Furniture. Copy upon request.

The Western Tool & Mfg. Co. SPRINGFIELD, OHIO

Taylor & Fenn Belt Driven

No. 12 Spring Press



er

d

UNIFORM BLOW SPRING PRESSES

Are made in three sizes, with either single or double action

Our No. 12 Belt Driven Spring Press, illustrated above, has a stroke of 31/4 inches. The foot treadle operates a safety clutch attached to the flywheel, which automatically stops the machine after each stroke regardless of whether the treadle is released or held down by the operator. The clutch can be adjusted for a continuous stroke if desired.

Descriptive circular gladly sent upon request

The Taylor & Fenn Co. Hartford, Conn., U. S. A.

41

SLOAN And Precision Tools



Automatic Pinion Cutter

Standard capacity 1"x1". Special sizes to order.

This Automatic Cutter for Pinions and Spur Gears combines the utmost rigidity with unusual delicacy of precision.

The automatic cutters, fixed to a stationary spindle, play in turn upon the pinion to be indexed. Wear and use cannot lessen their efficiency, as the depth to which each works can be independently regulated.

Made in three types, each is designed to satisfy the most exacting requirements of every job within its capacity, and to give unusual rapidity of production.

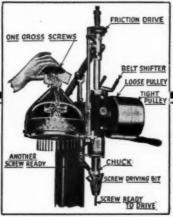
Let us know your needs; we'll do the rest.

Sloan & Chace, Inc.
361 Sixth Avenue, Newark, N. J.

Sixth Avence,

Don't Overlook Screw Driving

When Reducing Factory Costs



Showing Magazine Feed of the Reynolds Automatic

EXCESSIVE screw driving costs are wasting more dollars than you may realize—don't overlook them.

The Magazine-Feed Screw Driving Of the Reynolds Automatic

is saving from 65 to 85 per cent of the cost of driving screws in many of the best plants everywhere, while improving the quality of the work.

Let's see if we cannot get together on this substantial saving. No matter what kind of screws you use, tell us their length and gauge, with dimensions over all of your work, and we'll submit our proposition.

The Reynolds Machine Company Dept. H. H., Massillon, Ohio



Die Making Machines

save an average of 50%

Dies, templets, experimental parts, gages and the like can be sawed, filed and lapped on the Oliver of Adrian Die Making Machine much easier, more accurately and in a fraction of the time ordinarily required for handwork.

We also manufacture a line of

Point Thinners.

Drillpointers.

Profilers.



Send

for

Bulletins

Oliver Instrument Company, ADRIAN, MICH.

SHAPERS

12*, 14*, 16* Plain Crank, 16*, 20*, 25* B. G. Crank, either Cone Driven or through Speed Box.

Belt Shifter Regular Equipment All Cone Driven Shapers.

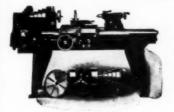
32° Back Geared Crank, Single Pulley Drive.



The Smith & Mills Co., Cincinnati, O., U.S. A.

Carroll Invisible Gap Bed Quick Change Gear Lathe

Takes care of a large variety of work-



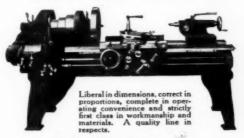
for the Service Station Mfg. Plant Jobbing Shop Tool Room and Schools

Circulars and prices sent on request

A. V. Carroll Machine Tool Co., Cincinnati, O.

HAMILTON Rapid Production

Lathes-Planers-Vertical Drills



Full particulars free on request

The Hamilton Tool Company, Hamilton, Ohio

Live Agents Wanted In Open Territory

CALL IN Gear Specialists

Skilled Men plus An Up-To-Date Plant



And You'll Get
Dependable
Accuracy
at
Rock-Bottom
Cost-

ALL TYPES: Spurs, Internals, Bevels, Mitres, Helicals, Spirals, Worms, Worm Gears, Sprockets, Ratchets. ANY MATERIAL: Steel, Cast Iron, Brass, Bronze, Aluminum, Fibre, Bakelite, Rawhide.

Made in Small and Medium Sizes, all of One Quality—the very best. We also carry a full line of Stock Gears for immediate delivery. Write as

Massachusetts Gear & Tool Co.

36 Nashua St., Woburn, Mass.

No. 2 Economy Power Hack Saw



6x6 Inch Capacity— Draw Cut— Swivel Vise— Automatic Stop— Hydraulic Oil Lift.

Hydraulic Oil Lift.
Frame cannot fall and

break blades.
CUTS FAST AND
ACCURATELY.

ECONOMY SAWS are all thoroughly tested before leaving our factory. Every saw guaranteed.

Built in sizes from 6x6 inch up to 8x18 inch capacity. BELT OR MOTOR DRIVE.

Write today for circular and prices

W. ROBERTSON MACH. & FDRY. CO., 56-58 Rane St., Buffalo, N.Y.



CATARACT LINE



Embodying an experience of nearly forty years, the superior design, accuracy and workmanship of Hardinge Lathes guarantee augmented production. Catalog on request.

Hardinge Brothers Inc.

Excess Capacity-

A NEW DESIGN to meet Best Modern Standards



Ask for further details

Carroll & Jamieson Machine Tool Co. Batavia, Ohio

The Making

Of A Dollar

It's hard to tell you where to begin, but there is one sure way, and that is by using this KEYSEATER.

It would be wonderful for you to get Catalog O

National Machine Tool Co.

2268 Spring Grove Ave.,

Cincinnati, O.



Keyseats Shafting In Place

Anywhere, in any position



The BURR Portable Keyseater

Cuts accurate Keyways up to 12" long anywhere, in any position, in shafts up to 5" diameter.

DON'T WAIT until you need it, when you would gladly pay 10 times its cost to have one—ORDER NOW.

Over 10,000 in use. Will you be the next to play safe?

JOHN T. BURR & SON

422 Kent Ave., Brooklyn, N. Y.

High Speed Riveting Hammers



(Patd.)

Cold Riveting

Write for Catalog "C"

SEND SAMPLES to be riveted and returned with complete production data.

The High Speed Hammer Company, Inc. 311 Norton St., Rochester, N. Y.

Bench Speed Lathe



Swing—8"
Length of bed—3'
Distance between centers—20"
Write for leaflet No. H43 and prices

The W. W. Oliver Mfg. Co. 1495 Niagara St., Buffalo, N. Y.

The Accuracy and Wide Range



of the Springfield Straightening Press make it Invaluable

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This press is made in three sizes to meet practically every straightening need that arises in shop, factory, tool room or garage. It lends itself with equal case and effectiveness to the testing of cams and crank shalts—the straightening of any length rough or finished work—or the truing of sprung tools. As it is compact it may be placed on work bench—an economy feature of space and time saving, second only to its wide range efficiency.

Send for circular showing its many uses

The Springfield Machine Tool Company 633 West Southern Avenue. SPRINGFIELD, OHIO

We also manufacture Engine Lathes and Shapers

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The Anderson Ever-Ready



Whether it's a crank shaft or a turbine rotar you are testing, the Anderson is equally sensitive. With its 6 sizes it will balance anything that revolves, up to 24,000 lbs.

It requires no leveling or adjustment, no centers; its hardened spindles are not dented by use.

"Swing"	20"	40"	60°	72*	96*	72*
Greatest diotance bet. standards Capacity in lbs. Approx. shipping weight. Code	20" 1000 45 Bend	30" 2000 90 Bid	30" 2000 150 Bis	66" 5000 350 Bib	88" 10000 650 Ben	201 24000

Any of above can be furnished with longer shafts

Anderson Bros. Mfg. Co.

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Our Stock Room Service is complete. We can fill all orders the day they're received. BUSHINGS

These Stock Bushings come machined, ready for instant use. All are broached, burnished and ground to extreme uniform accuracy. Standard or special oil grooves or drilled holes at a small extra charge. Rigid inspection prevails.

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"Borgeson Universal Joints"

Are you a user of Universal Joints?

If so!

Remember well and bear in mind that a good Universal Joint is hard to find. But if you want one tried and true, you will want the "Borgeson" before you are through.

You will become not only a "Buyer" but a "Booster" for "Borgeson."

SIZES: %, ½, %, ¾, %, 1, 1%, 1¼, 1½, 1½, 2, 2½, 2%.

Should you require Special Universal Joints, be sure to write for quotation.

Complete description gladly furnished upon request

The Borgeson Mfg. Co., Inc.

-PEERLESS-UNIVERSAL SHAPING SAW



Different Principles Greater Efficiency

Give The Most Of—
Speed
Accuracy
Blade Economy
SIZES:

6"x6"--9"x9"--13"x13"
PEERLESS

HIGH SPEED RACK-SAWS
6"x6" 9"x9" 13"x16"
Sturdy--Efficient--Reliable

Peerless Machine Co. 1218 Sixteenth St. Racine, Wisconsin Write for Details

MARKING DEVICES





ETCHED METAL NAME PLATES BRASS

THE SCHWERDTLE STAMP CO. BRIDGEPORT, CONN.

For Sure Balance--

an absolutely level and solid "Way" is necessary

Bowsher "Balancing Ways"



are brought to an absolut. level in ten seconds. No revolving parts.

The edges or "knives" upon which the work is tested are ground true, and are mounted upon the planed "ways" of a heavy bed or frame.

Standards adjustable to suit length of arbor.

Three sizes for floor-one for bench use Send for Catalog "F"

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Chicago Steel Slitting Shear



Light-Powerful Durable

Capacity 10 gauge Sheets Any Length or Width

> Flat Bars 3/16 x2 in. Weight 22 Lbs.

Price \$12.50 Net F. O. B. Chicago

Made by the makers of Chicago Steel Bending Brakes, Hand and Power, Over 25,000 in Use.

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Production Saw for High Speed Metal Cutting

Time per cut does not vary. Cutting time reduced half. Life of saw blades tripled.

Send for bulletins on complete line.



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"GRANT" Noiseless Rivet Spinning Machines and Rotary Vibrating Riveters cover all classes of work, including awkward pieces and riveting in out-of-the-way places.

> Tell us what your work is or send samples for riveting

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14 H. P. 110 V., A.C. 60 Cycles 4.8 Amperes 3450 R. P. M.

ONLY \$18.50

WESTINGHOUSE Motor Grinder and Buffer With Improved Base and Switch

emery wheel, 24 section buff. 7ft. of cord and plug as shown. A practical, efficient tool for shop.

garage or home.

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Motor Repair Shops Pattern Shops Boilers (Cleaning) Machine Shops Street Railways Welders-Foundries

BIAX

Biax makes flexible shaft machines for drilling, boring. grinding, polishing, screw-setting, nutsetting, etc.

Write for catalogue H

Biax Flexible Shaft Company

136 Liberty Street,

Mid-West Distributor - Tachometer Division Elgin National Watch Co., Chicago, NEW YORK CITY

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Proved Reliability-



Speed—Economy
The Cincinnation

DRILLS BUFFERS GRINDERS

Write for catalog and prices

The

Cincinnati Electrical Tool Co.

2678 Madison Road Cincinnati, Ohio

The Whirlwind Buffer and Grinder

Will cut the cost on any unhandy grinding or polishing job



Send for our latest bulletin

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The Best Since 1876



NORTH SIDE

Electric

Grinders—Buffers

Built complete ready to run. No extra wiring required.

SIZES-1/4, 1/2 & 3/4 H. P. A. C. 110 or 220

The North Side Tool Co.

Standard Ball Bearing Grinders



Made in sizes from 1/4 H.P. up to 5 H.P.

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Drills-14" to 11/2".

Send for Catalog

The Standard Electrical Tool Co.

1948 W. 8th St., CINCINNATI, OHIO

"D. & W." DEMAGNETIZERS!



Portable Simple Dependable

D. & W. Demagnetizers are independent units. structed with a con-tinuous "U" shaped



grade laminated steel. They are energized by two stationary coils thru which alternating current is passed. They require no belts, countershafts, or elaborate electrical connections. Two types, for alternating or direct current—the latter with a small converter. Tell us your chucking problems. An investigation and report by us may solve

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J. & H. Electric Co., 159 Clifford St., Providence, R. L.

Abolish Expensive Hand Finishing



Simplex-M Abrasive Band Grinder

This grinder accelerates production and cuts costs. Hand emerying or filing operations are antiquated in comparison. The use of this new modern machine assures straight grain finishes with sharp edges. Details of this and other styles and sizes on request.

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A Swivel Jointed Extension Reel



The 1927 Model of the New AUTEX Extension Reel—

permits your men to carry lamps in any direction. Speeds up the work.

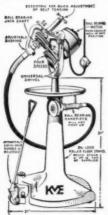
This valuable time and labor saver is rapidly finding a place in large Industrial Plants, Machine Shops and Service Stations everywhere.

Approved by the Underwriters

Now equipped with Belden Rubber Cord

Write for descriptive circular and the low price

The Cincinnati Specialty Mfg. Co., Inc. 1903 Powers St., Cincinnati, Ohio



Keller "BK"

"The Machine of a Hundred Uses"

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Non-Heating Shafts Ball Bearing Handpieces

FILING— GRINDING— POLISHING—DRILLING— ETC.

Tell us your problems

Keller Mech. Engineering Corp., 58A Washington St., Brooklyn, N.Y.

(See Page 62)

59



A Real Economy In Drilling Costs

Transform your single spindle drill into an accurate multiple driller.

Utilizing the feeds and speeds that you use for drilling one hole, you can drill two to six holes.

A special double adjustment permits any pattern of multiple drilling. We can design special heads with adjustable or fixed spindles.

If you send us a layout of your work we will show you how to cut your costs

The United States Drill Head Co., CINCINNATI, O.

Michigan Agents-National Sales Engineering Corp., Detroit, Mich.

The U.S.—

A 14" Sensitive Floor Drill

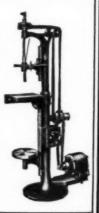
Designed in a machine tool shop to meet the need for a drill with a capacity up to ½ that will turn out accurate, rapid work at the jeast cost.

Price with motor, \$115

Or with Counter- \$70 shaft for Belt Drive

Three speeds; spindle ground to size with ball thrust bearing, counterbalanced by weight inside column; vertical adjustment to head; tables adjustable to any type of work. Write for folder, or better still send us your order.

The U.S. Machine Tool Co.



Keyless Ball Bearing Drill Chucks

Tremendous Gripping Power

Seven good reasons for using the

ETTCO

- 1. Lighter in weight.
- 2. All hardened parts.
- Keyless.
- 4. Hand operated.
- 5. Ball bearing.
- 6. Continuous grip.
- Simple construction.

Eastern Tube & Tool Company, Inc. 600 Johnson Avenue, BROOKLYN, N. Y.

Winterhoff Motor Portable Tools



Our new No. 3 Portable Motor-Driven Double End Disc Grinder is an unusually profitable machine both for the tool room and for production parts that require a true flat surface. Also made in combination. Write us today concerning Winterhoff Portable Tools.

Winterhoff Tool & Machine Co., EIKHART, IND., U.S.A.

Keller "BK" Flexible Shaft Grinder

"The Machine of 100 Uses"



 $\frac{1}{4} - \frac{1}{3} - \frac{1}{2}H$. P. Speeds up to 10,500



COMPLETE LINE OF ACCESSORIES

Rotary Files — Emery Wheels — Sanding Drums — Wire Brushes, Etc.

Keller Mech. Engineering Corp., 58A Washington St., Brooklyn, N.Y.



Operator easily grinding casting with Mall Flexible-Shaft ball-bearing hand spindle.

MALL TOOL CO.

7740 South Chicago Ave.,

CHICAGO, ILL.

Makers of the largest assortment of Electric Flexible-shaft Machines and Attachments, Write for Catalog.

Improved Thompson Grinder

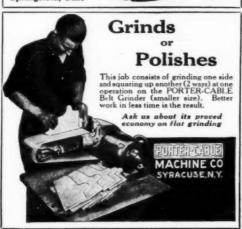
Self-contained and motor driven, this standard Grinder combines efficient means for the rapid and accurate production of every grinding operation required in a machine shop.

Capacity 10"x36"

Illustrated folder gives you full details

The Thompson Grinder Co. Springfield, Ohio





Announcing!



No. 2 Etteo Tapper—capacity ¼-inch. No. 2 Etteo Tapper—capacity ¾-inch. Tapper
Users of the No. 1—1/4-inch capacity Etico High Speed

Users of the No. 1—¼-inch capacity Ettoo High Speed Tapping Attachment will welcome the announcement of this New Size Ettoo—the No. 2,—capacity up to ½ inch.

Ettco Tappen eliminate tap breakage, whatever the cause. A "green" operator can bang the bottom of a tapped hole using an Ettco and still not break the tap—he has no friction to adjust.

Where Ettco Tappers have been installed tap breakage has been eliminated and production increased 100 to 500%.

You are interested in better tapping—take an Etteo Tapper for a ten days trial—after the test, if you can then afford to be without it, send it back—no obligation.

Eastern Tube & Tool Co., Inc., 600 Johnson Ave.

No. 2 ALTO Motor Driven Tapping Machine

SAVES—time. SAVES—tape. SAVES—in the first cost and in the long run.

Its main points are-

Motor driven, 3 speed, double speed reverse, quick change, back geared cone clutch. Sensitive for small tapping and powerful enough to drive 3% taps through steel.

We also make smaller high speed tappers.

Write for descriptive literature and attractive prices



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Thor ELECTRIC DRILLS

Big Powerful • Gears Stand Gruelling Service

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Work a Thor Drill hour after hour, day after day. Put it on the most gruelling job you have. The big powerful gears will stand a world of abuse. The teeth are extra wide. They are made of special heat-treated alloy steel. The two radial bearings on the spindle insure permanent chuck alignment. No wobble—no breakage of drills. And for safety sake—a 3-wire safety cable is standard equipment—shocks are impossible. Ask a Thor salesman about our liberal free trial offer—or write us.

Have you a copy of our catalog in your files?

TOOL MAKERS SINCE 1893

Independent Pneumatic Tool Co. 600 W. Jackson Blvd., Chicago, Ill.

Spot Facer Troubles The "UTILITY"

Incorporates features that insure sound economies by practically eliminating spot facer and counterbore troubles.

Its cutter drive is simple and powerful. The cutters, of especially tempered high speed steel, cannot break, and are removable—its set screws cannot loosen or the pilot twist off.

Shall we send our catalog?
It points the way to tool economy!

The J. C. Glenzer Co.

6469 Epworth Boulevard
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Long Life in

BRIDGEBILT Factory Seating

Select the chairs and stools for your factory from this line. They will meet your particular needs and stand up under any wear you give them.

Write for prices and illustrated folder



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Curtis Universal Joints

of Simple, Rugged Construction



Send for new Catalog No. 47

BOSTON GEARS

BOSTON GEAR WORKS SALES CO. Norfolk Downs, Mass.

BOSTON NEW YORK PHILADELPHIA CLEVELAND CHICAGO

E-Z THREAD DIAL

Thread cutting on engine lathes made easy, and at lower cost. Can be easily attached to all size lathes. A reliable device that will aid the operator in the work of cutting

threads.
Threads can
be cut close
up to shoulders as easily as
the ordinary
thread.



Eliminates stopping or reversing the lathe.

Saves cost of backing belt, Saves power to drive same. Fast growing in popularity.

A large corporation ordered nine at one time. Another five. Sent on thirty days' trial. Send for folder

JAMES M. COLVEN, 20 Wolffe Street,

We are Specialists in "Quality"
Hollow Bored Forgings and Steel Shafts



Our specialized equipment and experience enable us to furnish you with "quality" piston rods, clutch shafts, lathe spindles, rams, steel pipes, hydraulic cylinders, etc., at reasonable prices and with prompt delivery service.

Send us blueprints for estimate

American Hollow Boring Co. Erie, Penna.

Complies With Safety Laws!



Canton New Safety Friction Load Brake

Furnished at small extra cost on all "Canton" Portable Cranes, Hoists and Trucks, and easily applied to those already in service.

This Btake holds the load at any point. making it impossible for the load to get away from the operator. It's great safety insurance!

"CANTON" CRANES are made in several sizes. Write for Booklet E-8.

CANTON FOUNDRY & MACHINE CO., Canton, Ohio

New York Office: 203 East 15th Street, Second Floor

Towsley Trucks PAY 500%



Glad to tell

you how TOWSLEY

TRUCKS
repay their
cost every
two to three

Every style for every need.

months.

Write for facts and figures; you'll never regret it

John T. Towsley Mfg. Co., Cincinnati, Ohio, U. S. A.



Atlas Arbor Presses

For All Forcing Operations

Illustration shows our No. 55 Power Drive Press, which is adaptable for fast production work and capable of supplying ten tons pressure.

Write for our Bulletinshowing 30 different sizes

Atlas Press Co.

Department B, Kalamazoo, Michigan

Lourie Hydraulic Presses



A complete line of Horizontal and Vertical Presses built for any tons capacity or specifications. Either hand or power operated.



Send for Catalog

LOURIE HYDRAULIC CO. SPRINGFIELD, ILL.

Less "Walk" and More "Work"

Increases Output and Lowers Costs



You manufacture small articles from round bar stock—on a turret lathe, for instance. Where do you keep the stock? Is it handy? The quick, easy, stepsaving and time-saving way is to have two or three of—

"The Handiest Racks"

-filled with bar stock, where you can lean across and pick it up without delay. They save time and space, and keep stock neatly piled and assorted.

Shipped promptly on trial

Wm. S. Yohe Supply Co.

Edgemont Friction Clutch

This clutch was designed to drive wood, steel or cast iron pulleys, gears, drums, rope sheaves, etc., dn the sleeve.

It is lined with burnproof brake lining, which permits it to be



Extended Sleeve Plate Type"C"

operated continuously, and used in durty and dusty places.

Edgemont Friction Clutches are made for all purposes. Our engineering department will gladly advise you on the proper clutch installation.

for Catalog

Correspondence invited

Edgemont Machine Co., Inc., DAYTON, OHIO

SIGOURNEY Sensitive Drills

All Parts Interchangeable!

Made with 1 to 4 spindles. Self-aligning ball bearings.

Extremely sensitive, accurate and durable, they are quality drills for those who buy tools for what they do.

The picture shows our No. 0 2-spindle ball bearing Bench Drill--a splendid tool.



Booklets on both Plain and Ball Bearing Drill

THE SIGOURNEY TOOL CO., HARTFORD, CONN.

Increased Shop Speed plus SAFETY

It's easy when the overhanging jaw saves set up time on tough jobs; removes the hazard of personal injury; and stops drill breakage.

A Safety Tool that Saves Its Cost in Labor Every Six Months.

Write for free trial offer

Modern Machine Tool Co.

Jackson, Michigan

ARMSTRONG

GANG PLANER TOOL





For Planing Large Surfaces

It pays for itself in a few hours' work. In planing large castings it saves 50 to 75 per cent of time required with a single-point tool-a most pleasing economy.

Write for Catalog of over 100 shapes and sizes of Lathe and Planer Tools; also separate Catalogs of Armstrong Ratchet Drills, Wrenches, and Dogs and Clamps.

Armstrong Bros. Tool Co.

"THE TOOL HOLDER PROPLE"

308 N. Francisco Ave., Chicago

R&G Adjustable Boring Tool

Invaluable in the Tool Room and on Production Work on Turret Lathes, Horizontal Mills, Etc.



It saves time and insures accuracy in boring jig plates, dies, etc., on milling ma-chine table and drill press, that cannot be handled on the lathe. It readily trues to size holes drilled on turret lathe.

Only \$38

If standard taper shank is required, the price is Five Dollars extra.

Send us your order or write for camplete description of this handy, time-saving outfit.

Ribbe & Grev

La Porte, Ind.







SHEAR AND ROD CUTTERS
AND
SCREW MACHINE PRODUCTS

A Type for Every Service

Send for Revised Catalogue

Style E



W. W. & C. F. TUCKER, INC., Hartford, Conn. FOREIGN AGENTS: Femwick Freres & Co., Paris, France Alfred Herbert, Ltd., Yokohama, Jajan



Tolhurst Chip Wringers reclaim 6 to 15 gallons per load and handle three or four loads per hour. TOLHURST MACHINE WORKS
TROY, N.Y.

The M-P Three Tool Turret



Ask for our descriptive circular, with net prices.

IMPROVED E-Z SET BORING TOOLS

MACHINE SPACING WASHERS

MILLING MACHINE SPACING WASHERS

The Maxwell Products Co.

Ottawa & Indiana Ave.,

Cleveland, Ohio

Wade Collets, Chucks, Blanks

Standard for Half a Century



Collets for A W T and W W Lathes carried in stock. Collets and Blanks for screw machines. Step Chucks.

For 50 years the collets, blanks and step chucks manufactured by the American Watch and Tool Company, have been regarded as "standard." The Wade Tool Company, successors to the American Watch and Tool Company's business in this field, are rigidly maintaining the same standards.

Write for the Catalog of Precision Lathes and Tools

The Wade Tool Co.

49-59 River St.,

Waltham, Mass.

The Quick Acting "Hartford"

An Unusual Milling Vise



	Jaw width	į
	Jaw depth 11/4	ľ
	Maximum opening31/2	ľ
l	Weight40 lb	8

Also made in the swiveljaw type with hard or soft jaws, maximum opening

This unusual milling vise has the power and durability to handle any job within its dimensions and to stand up under the hardest usage. A special design includes a cam handle that gives instantaneous opening and return, and a top eccentric lever handle that furnishes unequalled binding power. Steel parts drop forged, hardened and ground.

Hartford Special Machinery Co., 285 Homestead Ave.

Gem Drill Press Vise

With Automatic, Quick-Acting, Powerful Grip



Holds Irregular Pieces Firmly

The jaws are made of steel, hardened and ground, with horizontal and vertical "V" grooves. The independent swivel jaw holds taper and irregular work with a bull-dog grip. Its quick action, powerful grip and adaptability make it the most efficient vise on the market. Made in three sizes. Write today for folder, picturing its use in drilling and milling operations.

J. E. Martin Tool & Die Works, Springfield, O.





Analysis of Circulation of

HITCHCOCK'S MACHINE TOOL BLUE BOOK

By Dun and Bradstreet Ratings

Number	Concerns
Exceeding \$1,000,000	1,483
\$500,000 to \$1,000,000	916
\$300,000 to \$ 500,000	948
\$200,000 to \$ 300,000	842
\$125,000 to \$ 200,000	1,305
\$ 75,000 to \$ 125,000	1,455
\$ 50,000 to \$ 75,000	1,162
\$ 20,000 to \$ 50,000	2,847
\$ 10,000 to \$ 20,000	1,879
\$ 5,000 to \$ 10,000	1,672
TOTAL, Private Concerns Rated over \$5,000. Steam and Street Railway Mechanical and Purchasing Officials, Government and Municipal Plants, Technical Schools, Foreign Dealers in American Machinery, Etc.,	
TOTAL to Buyers of Known Responsibility."	17,979
*Concerns quoted in Dun or Bradstreet, but without Capital Rating	
	2,802
without Capital Rating Concerns not yet in either Dun or Bradstreet,	2,802 1,799

^{*}This group includes a considerable number of large concerns, and many small concerns of high credit, whose capital rating is not given by either of the commercial agencies.

MARTINDALE

Electric Etcher



For marking gauges, dies, gears, saws, tools, drills, shafting and all other articles made of iron or steel. It is much quicker and more satisfactory than the old paraffine and acid method. Writes like a pencil and burns the letters in the steel, making a permanent and legible record. *Price \$50.00 complete*.

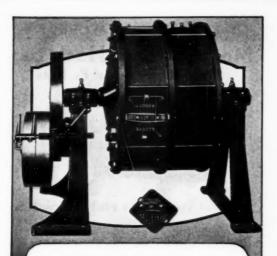


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1260 West 4th St., Cleveland, Ohio

Please send bulletin on Etcher to

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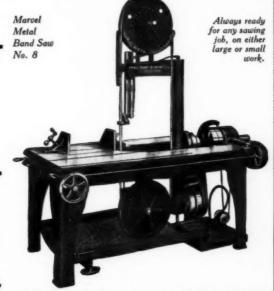
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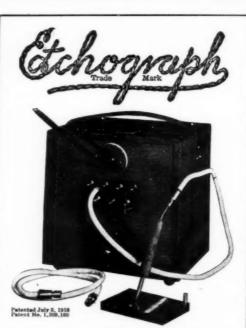
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Rhoden Mfr. Co., Hartford, Conn.
Springfield Machine Tool Co., Springfield, O.

Shears, Alligator Canton Foundry & Machine Co., Canton, O.

Shears, Hand
Armstrong-Blum Mfg. Co., 341 N. Francisco
Dreis & Krump Mfg. Co., 7432 Learner Blage
Chicago
Hendley & Whitzemera Co., Bealet, Wis.
Lewthwaite Machine Co., T. S., New York
Oliver Mfg. Co., W. W., Buffalo, N. Y.
Tucker, W. W. & G. Y., fac., Harfford, Genn.
Whitney Matal Tool Co., Rockford, Ill.

Shears, Power Hendley & Whittemers Co., Beleit, Wis.

Slatting Machines Rhodes Mig. Co., Hartford, Conn.

Spacing Washers Detroit Stamping Co., Detroit, Mich.

Special Tools and Machinery Bradford Machine Tool Co., Cincinanti, O. Sloan & Chace, Inc., Newark, N. J. Stecher Co., Chac., 2452 N. Greenview Ave., Chicago Wade Tool Co., Waitham, Mass.

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Sprockets

Massachusetts Gear & T. Co., Woburn, Mass.

Stamps, Steel and Rubber Schwerdtle Stamp Co., Bridgeport, Conn.

Stencils, Brass and Oil Board Schwerdtle Stamp Co., Bridgeport, Conn.

Stools and Chaîrs, Factory Chicago Wire Chair Co., 619 N. La Salie St., Chicago

Straightening Machines
Springfield Machine Tool Co., Springfield, O.
Towoley Mfg. Co., John T., Emclenati
Whitney Metal Tool Co., Reckford, Ill.

Tap Extractors Walton Co., Hartford, Conn.

Tapping Machines and Attachments
Alto fife Co., 164; Wolfram St., Chicago
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Siona & Chaco, Inc., Navark, N. J.
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Thread Dials Colven, J. M., Yonkers, N. Y.

Thread Milling Attachments Claco Machine Tool Co., Cincinnati, O.

Threading Machines Kent Machine Co., Kent, Ohio.

Threading Tools Armstrong Bros. Tool Co., 306 N. Francisco Av., Chicago

Tool Holders Armstrong Bros. Tool Co., 308 N. Francisco Av., Chicago Western Tool & Mfg. Co., Springfield, O.

Tool Racks Chicago Wire Chair Co., 619 N. La Salle St.

Tools, Boring Armstrong Bres. Tool Co., 308 N. Francisco Av., Chicago

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Turatables
Canton Foundry & Machine Co., Canton, O.

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Bergeson Mfg. Co., Inc., Torrington, Conn.
Boston Gear Works Sales Company, Norfolk
Downs, Mass.

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Bath & Co., Cyril J., Gaveland. O.
Bennett Mely. Co., 50 Church St., New York
Bernatein & Co., Goo. M., 569 W. Washington Blut, Chicago
Bartoletis Machine Ted Co., Inc., Jersey Bartolette Machine Toot Un.

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Glinchnath Mohr. & Supply Co., Clinchnath Co.,

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Donahue Steel Products Co., Ed. N., Jeffer
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Empire Machinery Exchange Company, Inc.,

Cheveland, Ohio Rastern Machinery Exchange Company, IDE-lempire Machinery Exchange Company, IDE-ternity Machinery Co., E. L., 555 Washington Pailor Co., N. C., 30 Church Blrd., Chicken Pailor Co., N. C., 30 Church Blrd., Chicken Plater Machinery Co., Cheveland, Orthope Floater Machinery Co., Cheveland, Orthope Haetten & Co., J., E., 1nc., 50 Church St., New York Harris Bros. Co., 25th & Iron, Chicago Hill, Clarke & Co., 649 W. Wanhington Hyman & Sons, Joseph, Philadelphia Johnson, I. H. Jr. Co., Philadelphia Pa. Johnson & Sons Machinery Co., Wm. Cr., St. Louis, Mo. St. Levis, Me.
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Kinsey Co., E. A., Cincinnati, O.
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Av., Chicago Martin Tool & Die Works, J. E., Springfield, O

Vises, Machinists' New Britain Machine Co., New Britain, Coon. Western Tool & Mfg. Co., Springfield, O.

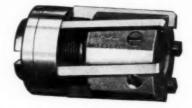
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Milling machine, Oesterlein, universal N	0. 2
Milling machine, No. 0 Kempsmith univ Milling machine, vertical, No. C Becker, Milling machine, duplex Knight, table 89 Pipe machine, 10" E. C. & B., fair conditi	ersal 400.
Milling machine, vertical, No. C Becker,	single spindle drive 1200.
Milling machine, duplex Knight, table 8	"x33" 575.
Pipe machine, 10" E. C. & B., fair conditi	on 600.
Pipe machines, 8" Oster, with dies, near t	new 800.
Pipe machine, 6" Oster, with dies	450.
Planer, 48"x48"x16' Pond, 4-heads for mo	tor
Press, No. 59 Toledo, geared, 5" stroke, I	for motor
Press, No. 11 Perkins, bed 24 X30 , 4 Sti	roke, plain
Bunch and shear, No. 2 Pilles & Jones, 2	175.
Press, No. 39 Toledo, geared, 5" stroke, 1 Press, No. 11 Perkins, bed 24"x30", 4" str Punch and shear, No. 2 Hilles & Jones, 2 Punch and shear, No. 51 Beloit combined Punch, coping, steel plate, 13" thrt., 38" die	space, 2 holes 1"x1", for m.d. 800.
Radial drill 8 Dreass-Mueller	390.
Radial drill, 3' Dreses-Mueller	400.
Radial drill, 4' Dreses (Simplex)	275.
Roll, angle No. 24 K. & R. cap., 6x6x1" for	or motor 3750.
Seamer, No. 365 Tole do double. 12x14" Shapers, 20" Cincinnati; 24" NBP., b. g Shaper, 15" Potter & Johnston, universal Shear, squaring, 60" Bertsch, 18" gap, cap Shear, alligator, No. 5 Canton, high knife	450.
Shapers, 20" Cincinnati; 24" NBP., b. g	r., crank 8550 750.
Shaper, 15" Potter & Johnston, universal	crank, belt or motor drive . 500.
Shear, squaring, 60" Bertsch, 18" gap, cap	. 16 ga., power
Shear, alligator, No. 5 Canton, high knife	, 3"
Shear, squaring, 36" Niagara 14 ga., hold	down, power
Shear, squaring, 36" Niagara 14 ga., hold Turret lathe, 13" Gisholt, 24" hollow spin Turret lathe, 5"x30" B. & O. geared head Turret lathe, 28" Gisholt, 34" h. s., t. a.	dle500.
Turret lathe, 5"x30" B. & O. geared head	l, m. d

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J. P. Rentschler & Co.,

Hammer, 200 lb. Bliss, 4-poppet. rranmer, 700 lb. Bitss, 4-poppet, Press, No. 3 R. & K., O., b. i, 4" str. Press, No. 3 Crosby, H" stroke, Press, notcher, No. C-92 Ferracute, Press, No. C-9 Ferracute, ob.i., std. Press, No. S-91 Ferracute, dbl. crk. Press, No. 6 Consolidated, incl. grd. Press, No. 54 Walsh, o. b. i. geared. Press, No. 54 Walsh, o. b. i. geared. Press, No. 54 Cameron, strin feed.

Press, No. 248 Cameron, strip feed.

6722 N. Maplewood Ave., Chicago Press, No. 14 Bliss toggle drawing. Press, No. 14 Bliss toggle drawing. Press, No. 165 Consolidated dbl.crk. Rolling mche., thread, No. 123 Bliss. Seamers, No. 12 McDonald, double automatic.

Shear, circie, No. 203 Stoll. Shear, No. 136 Niagara power squaring.

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No. 3 Rockford, hand. No. 11 Brown & Sharpe. No. 3 Cincinnati plain.

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10'x7'x25' Detrick & Harvey planer. 24"x24"x 6' Powell planer. 30"x30"x8' Belmer. 42"x42"x12' Powell.

Schmidt automatic.

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Metal saw, Espen-Lucas 31".

Wm. C. Johnson & Sons Machinery Co.,

26"x12' Putnam. 27"x12' Le Blond heavy duty, q. c. g. 38"x14' Pond, triple geared, 60" New Haven turning, 7' centers.

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a' arm Dreses radial. 6' arm Cincinnati-Bickford radial. PLANERS AND SHAPERS 48"x48"x16' Pond. 18" Walcott crank shaper.

24" Cincinnati crank. 24" Cincinnati crank motor-driven. GRINDERS

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No. 1 Pratt & Whitney, (2). No. 3 Wood Tilted Turret. GEAR CUTTERS.

Whiton bevel and spur. 24 26" Brown & Sharpe spur. PRECISION TOOLS

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Branches at Cincinnati and Columbus	
Drill, Moline No. 8-D. 10' rail, 26 No. 14 style D heads, 994	new \$1,500.
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118-124 S. Clinton St., Chicago, Ill. Chas. Molitor Machinery Co., LATHES

21"x10' LeBlond, q. c. g., t. a. 18"x10' Boye & Emmes, q. c. g. 18"x 8' Boye & Emmes, q. c. g., taper, draw, collet attachment. 18"x 9" Chard, q. c. g., taper, draw, 18"x 8' Sidney, quick change grs. 18"x8" American, q. c. g., taper, relieving attachment. 16"x8' Hendey, q.c.g., taper, collets

No. 2 B. & S. univ., vert. attach. No. 3 B. & S. univ., vert. attach. No. 3 B. & S. plain. No. 2 Rockford univ., vert., rot. att. No. 2 Rockford univ., vert. attach.

No. 4 Ohio rapid production.

S-spindle Henry & Wright, hi-sp.
6-spindle Leland Gifford, #" cap.
36" American, light nattern

36" American, light pattern.
24" Becker Bros., No. 310.
6-spindle Sipp, #" capacity.
5-spindle Henry & Wright, #" cap.
2-spindle Henry & Wright, 1" cap.

72 h. p. Ring, disc grinder. Bryant internal and chucking, (4).

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No. 31 Toledo, 61" stroke.
No. 71 Toledo double crank

MISCELLANEOUS. Balancing machine, motor attached. Bolt cutters, !" & 1!" Landis, (3). Bolt cutters, !" & 1" Acme, (2). Broaching mch., Nos. 1,2% 3 La Pointe Die slotter, Garvin.

14"x 6' Bradford taper, drawcollets, relieving attachment, q. c. g. 16"x6' LeBlond, quick change gear. 30" LeBlond, q. c. g., turret attach. 14"x6' Hendey taper, draw collets. 14"x6' Hendey taper, draw collets. 24"x8' Lodge & Shipley, q.c.g., taper. 16"x8' LeBlond, q. c. g. Warner & Swasey, double key.

Gooley & Edlund variety sizes, (6). No. 3 Kempsmith plain, late type. Model B Becker vertical.

No. 3 Becker vertical. 30" Bullard, 32" Colburn. No. 5 C Becker, vertical, rot. table.

14", 16", 18" crank, plain, 24" Gould & Eberhardt, grd. crank. 24" Hamilton heavy, grd. crank. 24" Hamilton heavy, grd. crank. RADIALS AND DRILL PRESSES. RADIALS AND Laniadle Sipp with comp. table. 20" Gould & Eberhardt, grd. crank.

1 spindle Sipp with comp. table, (2). 30" Superior, Aurora sliding head. 28" Aurora sliding head. 26" & 24" Superior, Aurora slid. hd. Foote-Burt, sliding head, 3" cap. Knight drilling & milling machine.

GRINDERS No. 12 Brown & Sharpe cylindrical. 8"x32" Norton cylindrical. 12"x60" Landis cylindrical. 7th. p. King,
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No. 2 Norton universal.
No. 2 State universal.
Cincinnati univ., 4" 35" table.
12" x12" Brown & Sharpe univ.
No. 2 Brown & Sharpe surface.
SCREW MACHINES
AND TURRET LATHES.
1" & 1" cap. Acne. b. g., frict. h.
No. 0, 1, 2, 3 Foster and B. & O.
16" —18" Fox turret lathes, fric. h.
No. 4 Brown & Sharpe, b.g., fric he

No. 4 Brown & Sharpe, b.g., fric hd.

Toledo power square shear. No. 5 Toledo geared. Emco bench type, (3). " capacity slitting shears.

Gear cutter, No. 13 B & S., bevel & s. Gear cutters, Waltham auto., (4), Keyseater, No. 2 Davis. Tappers, ‡" R.-Shafer; ‡" P.-W.

FOR SALE BY

F. W. Burns Machinery Co.,		Sattley	Bldg.,	Racine	Wis
PUNCH	PRE	SSES.			
No. 1684 Toledo toggle drawing. No. 14-B Bliss toggle drawing.		o. 83 Consoli			
No. 1 Bliss toggle drawing.	No	o. 51 Toledo	arch p	ress, gear	red.

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No. 15 Bliss toggle drawing.
No. 6 Consolidated, geared.
No. 5-Consolidated, geared.
No. 5-S-Ferracutic, d. c., f. w. type.
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No. 6-A Consolidated, s.s., f. w. type.
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#". I4", 2", & 24" Cleveland, model A.

"Cone automatics, like new. (3).
No. 2-G Brown & Sharpe, 1" cap.
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LATHES.

12"x 8' Hendey, q. c.
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Blowers, No. 2 American gas.

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Drill press, Kerns & spindle 16°, h.
S., b., b.
S., b. S

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FOR SALE BY

FOR :	DALE DI
J. E. Haetten & Co., Inc.,	50 Church St., New York, N. Y.
Automatic, 54" Cleveland, 3 hole tur-	ret, each \$ 700.
Automatic, No. 00 Brown & Sharpe,	with high speed, high serials, very
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Bolt cutter, 2" Landis, single head, n	iotor attached 550.
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Gear hobber, 5" Himoff, like new	
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Keyseater, No. 3 Catlin with post, g	ood order 350,
), d. c., motor
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Miller, 11"x30" Dalton mfg., like 7H	Becker
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Saw, 4" power hack saw, like new	
Shear, 8'x3/16 gap shear, 16" gap, Ni	

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Lathe, 18". 8" American, taper attachment, belt drive.
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Radial drill, 24" American plain, single pulley drive, tapping attachment.
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Traveling crane, 20-ton P. & H., 3-motor, 30" 6" span.
Send for list of all available machinery; you will find many desirable items.

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20" b. g., p. f., new, \$130, 20" drill presses (40), each \$40. 30" Reed-Prentice.

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30"x30"x12' Niles-B.-P., 2 heads.

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Emery grinders, \$2 and up. WOOD-WORKING MACHINERY. Shapers, double spindle, Whitney

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Guaranteed NEW MACHINES in original crates at prices below list: Automatic, 21" Gridley, single spdl. Pipe machine, No. 70 Forbes. Screw mchs., No.4 W. & S.,g.f.h.,(3). Straightener, No. 22 Corey.

Automatic, 11" model A., Cleveland. Drill press, 4-spindle Barr sensitive. Drill press, 22° Prentice, rebuilt. Drill presses, 2-spindle Woodward

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Grinder, surface, No. 2 Reed. Lathe, 16"x 8' American, geared

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Lathe, 16"x10" American.
Lathe, 20"x10" Reed.
Lathe, 8x60 Fitchburg lo-swing.
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Exceptional values in USED TOOLS: Planer, 30"x30"x16' L. W. Pond. Planer, 60"x60"x22' Niles. Radial, 5' Pond.

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Turret lathe, No. 2 Warner & S., hollow hex. No. 3 Cincinnati Acme. Turret lathe, No. 3 Cincinnati Acme. Turret lathe, \$2x26 Jones & L. (3). Turret lathe, \$2x3 Jones & L. (3). Turret lathe, \$2x3 Jones & Lamson. Turret lathe, 2t' Gisholt. Turret lathe, 24" Steinle.

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The O'Brien Machinery Co., Blueprint machine, "B" Buckeye.

single phase.

Boilers, h. r. t. and vertical.
Boring mill, No. 14 Beaman Smith
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Compressors, 12"x16", ER 1, 325 cu. ft., (3),

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Hammer, 2500 lbs. Chambersburg steam drop. Hammer, 2000 lbs. Chambersburg, double frame, steam forging.

Hammer, 1000 lbs. Chambersburg
steam drop forging.

Hammer, 600 lbs. Cham'burg st. d.

Hammer, 1000 lbs. Niles-Bement-Pond, double frame. Lathe, 30"x26' Lodge & Shipley, belt,

Lathe, 27"x10' LeBlond. tur. attach. Lathe, 30"x30' Harrington.

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Lathe, 16"x8' Cisco, h. s., q. c. g., taper.

Milling mche., No. 3 Garvin duplex. Milling mche., No. 5-B Becker vert. Milling machine, Bickford, arranged

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Pipe machines, 2", 4", 6", 8" & 12"
Oster, Cox, Williams, Eaton-Cole

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Presses. Nos. 2, 3, 4 Federal, new.
Press, Bliss No. 2, Stiles pat.
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Punch & shear, No. 3 Royersford,
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Punch & shear, Buffalo armor plate, combination.

Saw, 22" Newton, 9" capacity.
Saw, 30" Espen Lucas, 8" capacity.
Saw, 22" Newton, 7" capacity.
Shaper, 24" Steptoe, belt drive.

Shaper, 24" Steptoe, belt drive.
Shaper, 17" Bement Miles, traveling head 2 heads.
Shaper, 20" Bement Niles, heavy duty, traveling head, one head. Shaper, 16" Smith & Mills, sgl. grd. Shapers, 20" Stockbridge, with speed

box, (2),

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Mid-West Machine Tool & Supply Co..

Davenport, lowa Grinders, surface, Nos. 20 and 22

Automatic, §"-1\$" Cleveland. Automatics, full, No. 2, No. 0 and No. 00 Brown & Sharpe. Drill, 1-S Garvin duplex Drill, 4-S Garvin duplex.
Drill, 4-Spindle Rockford, p. f.
Drills, 4-spdl, 12" and 14" L. & G.
Drills, 5-spindle Allen, h. s.
Gear cutter, 4" Waitham, (new),
Gear tooth rounder, 12" Ingle.
Grinder, No. 10 B. & S. plain.

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Heald rotary. Hobber, No. 4 Adams Mobers, Nos. 3 & 12 B. & C. Miller, No. 2B B. & S. pl., s. p. d. Miller, No. 13-B B. & S., production. Planer, 60" Pond. Radial, 4' American sensitive. Radial, 4' Mueller.

Screw machines, No. 2 B. & S., p. f. Turret lathe, 1\frac{1}{2}" Acme.

Grinder, 10x36 Norton Partial list; send us your inquiries.

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BORING MILLS. VERTICAL. 16'-32' Niles extension type, b. d. 14'-20' Betts extension type, b. d. 106" Pond standard mill, belt or m.d. 90" Niles 2-heads, belt drive.

84" Betts 2-hds., heavy, belt or m. d. | BORING MILLS, 5" bar, Niles-Bement-Pond, belt dr column travel, 10'floorplate 16'x11'. rapid traverse, outboard support,

bars. 5" bar, Barrett cylinder borer.

5" bar, Deitrich & Harvey, floor type. 6" ba GRINDERS. 18"x96" Norton pl., arr. for motor dr. 10"x36" Norton plain, overhead belt.

600 lb. Erie steam hammer.

400 lb. Chambersburg, steam GEAR CU 6-A Cincinnati capacity 70"x20" latest model. motor drive.

LATHES 72"x40' Sellers heavy type, weight 50 tons, belt or motor drive. 54"x28' H. S. & M. heavy, modern, quick change, taper attachment.

No. 3 Hendey, plain, cone type. No. 3-B Brown & S. hvy, plain.

PLANERS 72"x72"x18' Pond, rev. motor drive. 84"x84"x30' Sellers, motor drive. 72"x72"x30' Sellers, belt drive. 72" x12" x30" Sellist, bell str. box, m.d. 36" x36" x36" x30" 1 48" x48" x16" N. B. P. rev, motor dr. reverse mot 52" x36" x22" N. B. P. rev, motor dr. reverse mot PUNCHES AND SHEARS

No. 3 Hilles & Jones dbl. 36" t., b. d. 4" Carlin alligator, 30" blade. No. 5 Hilles & Jones, 48"

Bulldozer, W. & W. No. 4.
Cold saw, 80" Newton, m. d.
Cold saw, 50" Espen Lucas, m. d.
Core wire straightener, 1" to 5/16" Flanging machine, " cap. McCabe, pneumatic.

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5" bar, Newark ou weig, Nies 6" bar, Barrett cylinder borer, 6" bar, N.-B.-P., floor type, 4" bar Niles-B-P., floor type, 3" bar, universal table type, 6" bar. Niles knee type,

No. I Landis universal, belt drive.

84" Diamond surface. HAMMERS

No. 4 Nazel, type I motor drive. No. 4-B Nazel hammer, motor drive. TTERS

No. 4 Brown & Sharpe 36" capacity, fine condition, low price, (2).

42"x28' Putnam, geared head, taper attachment, quick change. 5"x16' N. B. P., triple geared, belt MILLING MACHINES.

No. 4 Cincinnati plain, high power, No. 2-B Brown & Sharpe, heavy.

42"x42"x30' new Niles-Bement-Pond reverse motor drive, 42"x42"x26' N. B. P. rev. motor dr. 36"x36"x30' N. B. P. rev. motor dr. 36"x36"x16' new Niles-Bement-Pond reverse motor drive.

36"t., b. d. No. 4 H. & J., dbl., 48" thr., m. d. de. Angle shear, H. & J., 6"x1" cap. t., m. d. Rotary, Gray No. 1—3/16" cap. MISCELLANEOUS.

Gear cutters, 6A Cincinnati, motor drive: capacity 72"x20' Hydraulic forging press. 1200 tons. Piate planer, 25' H. & J. No. 6. Riveter, Allen, 48" throat, 24" gap. Welding torches and generators,

FOR SALE BY

The Randle Machinery Co.,

Automatic, 42" Gridley. Automatic, 43° Gridley, Bench press style W', Emco make. Bolt cutter, 2" Acme. Boring mill, 40" & 42" King. Boring mill, 72" Niles. Boring mill, 72" Niles, spindle type. Dorill, 20° Rockford upright, b. g., t.a. Drill, 21° Cincinnati upright, b. g., t.a. Drill, 24° Cincinnati upright, b. g. Drill, 26° Carlton, pl. radial, s. p., b. g. Drill, 4′ Bickford, g. b. d. Lathe, 16"x 6' Monarch, new. Lathe, 16"x 6' LeBiond, l. c., t. a. Lathe, 16"x14' Cisco, brand new, geared head, s. p. d. Lathe, 17"x 6' loose change, rebuilt. Lathe, 18"x 8' LeBlond, l. c., rebuilt. athe.18"x10'LeBlond.q.c.,6x14 gap.

Lathe, 20"x12" Ohio, l. c., rebuilt. Lathe, 24"x12" Le Blond, l. c. Lathe, 24"x12" Bradford, q. c.

1733 Powers St., Cincinnati, Ohio

Milling mche., No. 2 B. & S., univ-Milling machine, No. 2 LeBlond, pl-Milling machine, No. 4G LeBlond,

geared head, plain. Planer, 36"x38"x16' Gray, 3 heads. Planer, 36"x36"x16' Gray, 2 heads. Planer, 30"x30"x16' American, 2 hds. Planer, 26"x26"x16' W. & B., 2 hds. Profile machine, Fisher universal. Shaper, 14" Steptoe, plain. Shaper, 16" Gould & E., plain. Shaper, 15" Potter & Johnston. Shaper, 16"-28" Queen City, slightly

used.

used, Shaper, 20" Columbia, back geared. Shaper, 24" Flather, back geared. Shaper, 28" Columbia, back geared. Squaring shear, 4"x146" Streine gap, motor driven

Turret lathe, 24"-3x36" J. & L. Turret lathe, 28" & 34" Gisholt, m. d. Wheel press, 100-ton Southwark, ver. Also many others in stock. Let us have your inquiry.

FOR SALE BY

Fitzsimmons & Cole Machinery Company Pittsburgh, Pa.

1208 House Building, Air compressor, Ingersoll 19x10, 186'. Bolt cutters, 14', 2', 3', 4' Landis. Boring mill, 30' Colburn, m. d. Boring mill, 42'' Bulland, b. d. Boring mill, 94'' Pond, 2 hds., b. d. Bulldozer, No. 25 W. & W., m. d. Drill, radial, 6' Frentics, a. p. d. Drill, radial, 6' Prentice, s. p. d. Drill, 14' Hamilton upright, b. d. Drill, 24' Cinti, upright, sliding hd. Flanger, McCabe, ‡' Capacity. Gear cutters, spur and bevel. Gear planer, 24' Gleason, bevel, b. d. Grinder, 15''x88' Landis, crankbalt. Grinder, No. 16 Blanchard. Hammer, 50 lb. Mayer, upright. Hammer, 50 lb. Mayer, upright. Hammer, 50 lb. Mayer, upright. Hammer, 100 lb. Bradley, upright. Hammer, 150 lb Veakley, upright. Hammer, 150 lb Veakley, pneumatic, Hammer, 260 lb. Reaudry, upright. Hammer, 28 lb. 3 lb. 4 lb. Nazel, Hammer, 28 lb. 3 lb. Morgan Keyseater, No. 6 Mitts & Merrill. Lathe, 16 % American, 9. c. g., t.a. Lathe, 32 % 18 florideford, grd. hd. Lathe, axis, Bridgeford, grd. hd. Lathe, axis, Bridgeford, db. db. Miller, plain, No. 3 lb. Brown & S. Miller, glab, 24x 20 kl Tingersoll. Pipe machine, 19" Jarecki, b. d. Planer, 36 % 36 % 10" Cincinnati, 2 hds. Planer, 48 % 48 % 16 Pond, 4 hds., b.d. Planer, 96 % 200 Pond, 4 hds., b.d. Planer, 9. s., Cleveland, 38 % 38 % 16" Cincinnati, 2 hd. Planer, 9. s., Cleveland, 38 % 38 % 16" Planer, 9. s., Cleveland, 38 % 38 % 16" S. Planer, o.s. Detrick & H.,42"x42"x12' Planer, o. s. Cleveland 48"x48"x20 Planer, rotary, No. 2 Cleve., 48" hd.

Press, Ferracute P-1, 1½" stroke. Press, No. 37½ Bliss, s. s., 6" stroke. Press, toggle, No. 1½ Bliss, Press, wheel, 400-ton Niles. Press, wheel, 400-ton Niles, Press, forging, 500-ton United, hyd. Punch, & a, 30^{-t}tur, L. & A, 19^ttur 1". Punch & s, 30^{-t}tur, L. & A, 19^ttur 1". Punch & s., Pels comb., 19^ttur 1". Riveter, Hanna, 18th tur, 1.5th gap. Riveter, Allen, 66th throat, 15th gap. Riveter, Allen, 60th throat, 50th sile, w. A. Sand blast, MacLeod, 36th x36th. Saw. cold. 20th Hirley. Sam, cold. 20" Higley.
Shaper, 20" Cincinnati, b. g., b. d.
Shaper, 24" Gould & Eberhardt, b.d.
Shear, angle, H. & J., cap 6"x6"x1". Shear, angle, H. & J., cap. 6"s6"x1".
Shear, alligator, Lewis, 14" square.
Shear, bevel, Lennox, 1"
Shear, guil, No. 9 H. & J., 14" round.
Shear, guil, No. 9 H. & J., 14" round.
Shear, roul, No. 10 H. & Bliss, 3/16" cap.
Shear, rotary, No. 10 Quickwork, 1".
Shear, rotary, No. 6 Quickwork, 1".
Shear, rotary, No. 6 Quickwork, 1".
Shear, squar. 12 x4" Streine, m. d.
Shear, squar. 12 x4" Streine, m. d.
Shear, squar. 7"x1" Canton, b. d.
Shear, squar. Na N. & S. R. & R.

Shear, 36 x3/16 Cincinati, m. d. Straightener, bar, No. 3 K. & R. Straightener, beam. No. 4 H. & J. Testing machine, 100,000 lbs. Riehle. Upsetters, 13" to 5".

FOR SALE BY

Scott-Bansback Machinery Co., 130 S. Clinton St., Chicago, Ill. Guaranteed Used Tools.

Auto. sc. mch., B. & S. No. 19,859, Auto. sc. mch., B. & S. No. 90, 500, Auto. sc. mch., B. & S. No. 90, 500, Auto. sc. mch., B. & S. No. 90, 450, Auto. sc. mch., B. & S. No. 90, 450, Auto. sc. mch., B. & S. No. 9, 550, Auto. sc. mch., No. 32, Nat'l Acme 400, Auto. sc. mch., Cinti. s p § cap. 950. Bolt cutter, 2" dbl., db. D. & H. 300. Boring mill, Colbum vert. 30" 450, Boring mill, Morris bort., mtr.

Boring mill, Morris horiz., mtr. dr. with motor, 1.15/16" spdl...1000. Drill press, 4 sp. Kokomo h. s.. 400. Drill press, No. 310 Baker (5)ea. 290. Drill press, 24" Minister, heavy. 350. Drill press, 36" Aurora, al. hd... 290. Grinder, No. 1 Frazer surface and cyl. covertible complete. 450. Grinder, Detroit centerless 4B. 1500. Grinder, No. 55 Heald, b. spd. 850. Grinder, No. 65 Heald, b. spd. 850. Grinder, No. 65 Heald, b. spd. 850. Grinder, No. 700. No. 2 M. & G... 150.

room equip. inc. relieving att. 800. Lathe, 14"x8' Hendey taper & c. 500. Lathe, 18"x8'Carroll, d.b.g.,q.c. 450.

Saw, 9":19" Peerless high speed 173, Screw mch. No. 6W. & S. bk., gd. 700. Screw mch. 124" P. & W. Comp. 180. Screw mch. No. 1 W. & S. comp. 125. Screw mch. No. 1 W. & S. comp. 125. Screw mch. No. 10 Foster 3"cap. 700. Shaper, 16" Springfield pl. crank 300. Shaper, 24" Rockford, bk. gd.cr. 600. Shaper, 26" Kelly, b. g. cr., h.d. 600.

FOR SALE BY

Brown Machinery Co.,

Beaders, No. 8 Pettingell, 42" thrt, Blowers, Nos. 7 & 9 Sturtevant. Buffer, Hisey, 3 h.p., 3-p., 60 c., 220 v. Compressor, steam drive, Norwalk

Compressor, steam drive, Norwal 20x20x13x24, 890 cubic feet. Cut-off mchs., Nutter & Barnes. Drill, bench, No. 1 Langelier. Drill, 14" United States. Drill, 20" Canedy-Otto, b. g., p. f. Drill, 28" Aurora b. g., p. f. t. a. Drill, Mo. 2 Barnes horiz, mdisa Drill, Mo. 2 Barnes horiz, mdisa European No. 8 Land 2 Americas. Drill, horiz, radial, No. 3 Barnes, Furnaces, Nos. 1 and 2 American, Gear cutter, No. 3 B. & S., 36x8", Grinders, emery, St. Louis & Western, 100 new at 596 discount. Grinders, tool, Diamond. Grinders, tool, Diamond. Grinders, tool post, U. S. & Hisey, Grinders, plain, No. 12 B. & S.; 10x88" Norton; 8x18" Ott. Grinder, yilinder, No. 60 Heald, Grinders, disk, No. 6 Besly; No. 14 Gardner.

Gardner. Grinder, universal, No. 12 B. & S

Grinder, 30" Diamond, roll or spdl. Hammer, size A United. 50 lbs., m.d. Hammer, drop, No. 3 W .- W.

2323 N. 9th St., St. Louis, Mo.

Hammer, helve, 40 lb. Bradley. Hammer, neive, 40 Ib. Brauley. Keyseater, No. 2 Davis, B., q. c. g. Lathe, 26"x10" Whitcomb-B., q. c. g. Lathe, 10"x 8" Lodge & S., q. c. g. Lathe, 16"x8" Monarch, q. c. g. Lathes, 16"x8" Monarch, q. c. g. Lathes, 10, 5A Potter & Johnston, with chucks. Lathe, turret, 16" Gisholt. Lathe, turret, No. 4 Wood, b. g., p. f.

to turret. Motors, 1, 3, 5, 7\$, 10, 15, 25 h. p., Motors, 1, 3, 0, 45, 10, 10, 20 n. p., 3-ph., 60 cy., 220 v. Miller, No. 00 Brown & Sharpe, Miller, No. 6 Whitney hand, Miller, No. 4 Garvin plain. Planers, 60 "M60" x20 Niles, 3 heads, Polishers, drop head, New Britain,

Polishers, drop head, New Britain, Press, No. 5 Stiles & Parker, grd. Press, Bliss pattern, o. b. i. Riveter, §" Adt. Riveter, §" Adt. Street, No. 13 Pettingell. Shear, rotary splitting, No. 134 Marshalltown, § throat, §" cap. Tapping machines, Garvin; Burke C,

FOR SALE BY

No. 3 Fox Street, Bridgeport, Conn. J. L. Lucas & Son, Inc. .

BORING MILLS. 24" Bullard, v. t. l., 3 jaw comb., chuck table, with New Era hd., serial 6920. 36" Bullard, v.t.l., 3 jaw comb., ck. tbl., pwr. rapid traverse, serials 5000, (2).
42" Bullard two head vertical boring mill.

No. 31 Lucas horizontal boring mill

GRINDERS. 10x80 Norton plain. No. 3 Brown & Sharpe univ. No. 2 B. & S. surface, mag. chuck. 24x144 Landis plain, rebuilt. 6x32 Norton pl., late type, serials 8300. No. 6-20 Besly double spindle disc.

10x18 Norton pl., late type, serial9600 HAMMERS 500 lb. Mossberg No. 5 auto. drop. 100 lb. Bradley Compact.

250 lb. Beaudry Champion, 600 lb, model D. Billings Spencer. LATHES

32"x18' New Haven, 95% new. 32"x12' Bridgeford, grd. hd., mtr. dr. 14"x6' Hendey, yoke head, (15). 16"x8' Hendey, yoke head. MILLERS

8" P.&W. auto millers, (brand new). 12" P. & W. auto, millers, rebuilt No. 24 Ohio heavy duty plain, q. ch. No. 1 Milwaukee univ., hds. & vert. No. 2C Hendey univ., latest pattern. No. 12 Hendey-Norton univ., fully No. 34 Ohio heavy duty pl., dbl. b. g. equipt.

MISCELLANEOUS Eyelet machines, No. 05 Waterbury. Gear cutter, 4" Waltham excellent. Thread miller, 6x48 Pratt & Whitney. Turret lathe, No. 2-A Warner & S. Turret lathe, No. 4 Warner & S. univ. 1x5 New Britain auto, screw. No. 24 New Britain chucking. Wire former, No. 1 Baird, 4-slide.

FOR SALE BY

Clinton Machinery Co., 128 So. Clinton St., Chicago, Ill. MILLING MACHINES.

No. 3H LeBlond univ., fully equipt. No. 2A Hendey, s. p. d., plain. No. 2 Kempsmith Maxmiller, vert. No. 3 Ohio plain. No. 20 Van Norman duplex, compl.

No.00 Brown & Sharpe, hand miller. No. 2AU Garvin univ., fully equipt No. 0 Bristol, ball bearing. LATHES

18"x12' Boye & Emmes, i.e.g., taper attach., chucks. 18"x 8' Rockford, q.c.g., t.a., compl. 18"x 8' Prentice, q. c. g., complete. 18"x 6' Canedy-Otto, s. q. c. compl. 14"x6' Monarch, q.c.g. d.b g., compl. DRILLS AND PU 14"x 6' Hendey, q.c.g., taper att..(2) . 14"x 6' Bradford, q.c.g., complete. 14"x 7' South Bend, complete. 10"x 5" Barnes, complete. 10"x 5" Barnes, complete. 7"x30" Daltons, new and used. Hardinge and Rivett precision.

NCH PRESSES. 4-spindle Barnes, gang drills, (2). No. 00 Verson bench presses, (2).

16" Kokomo, high speed, gear box. 20" Rockford, b.g., p. f., w. & l. fd., (3). 14" Leland & Giff., h.s., b.b., g" cap, 4 and 6-sp. Avey. h. s., b. b., a" cap, Knight drilling and milling mehe. No. 3 American Can, o. b. i. No. 4 Walsh, o. b. i. No. 4 American Can, o. b. i. No. 3 Consolidated, o. b. i., b. g. No. 4 Consolidated, o. b. i., 5" str. 26" Rockford, b.g., s h., with t.a., (2). 3-spindle Barnes, gang drill.

SHAPERS 16" Ohio, h d., b. g., crank. 20" Rockford, b. g., like new, crank. 21" Smith & Mills, b. g., crank. 24" Stockbridge, b. g., crank. 24" Smith & Mills, crank. 16" Queen City crank.

SCREW MACHINES, and collets. (No. 1 Warner & S., wire fd., collets. fd., collets. No. 4 Warner & S., wire fd., collets. t lathe. 2 Collets ut lathe. 2 Collets. (1 State No. 1 Foster, wire feed and collets. No. 1 Bardons & O., wirefd., collets. Hardinge precision turret lathe

Punch and shear, Scully single end, 22" throat, arch. jaw & shear'g att. Riveters, Nos. 2A & 3A High Speed. Hack saw, Peerless h. s Hack saws, Nos. 1 & 2 Marvel. Keyseaters, Nos. 1 & 2 Davis,

FOR SALE BY

Taylor-Hall Welding Corporation, 3 May St., Worcester, Mass. BUTT AND SPOT WELDERS

ot welder.

One Thomson 2A butt welder.

One Thomson 2A auto, butt welder. One Toledo 133 spot welder. One Thomson 40-A butt welder. One Thomson 80A butt welder, One Thomson 20-A butt welder, new. One Toledo No. 3 butt welder. One Thomson 5-A butt welder.

Many Others.

FOR SALE BY

B. L. Saltzman.

Bolt threader, Geometric 14". Boring mill, No. 1 Barrett. Drills, Cincinnati b.g., taper att., 20". Drill, Fox multi-spindle. Drilf, Fox mutit-spindle, Gear hobber, No. 5-A Lees-B, Gear generators, No. 6 & 11 Gleason, Grinder, No. 60 Heald internal. Grinders, Taylor & Fenn cylinder, Lathes, D. & W. Pond 16"X7. Lathes, Lodge & Shipley 16"X10".

809 W. Lake Street, Chicago, III. 524 W. Van Buren St., Chicago, III. Miller, No. 5 LeBlond.

Punch presses, Bliss, (Stiles type), No. 22 Screw machines, Bardons & Oliver

No. 4. Screw machines, Foster No. 6, Screw mchs., Warner Swasey No. 6. Screw machines, Warner & Swasey,

hand. Nos. 1 & 2. Shapers, 12", 16" & 24". Motors and Generators-Factory Transmission.

FOR SALE BY

Cincinnati Machinery & Supply Co., 215 E. Pearl St., Cincinnati, O. LATHES

36"x36' Bridgeford, g. h., q. c. g. 27"x18' Lodge & Shipley, 3 s. c., q. c. 38"x16' Fay & Scott, 1. c. g. 24"x12' Bradford, 1. c. g., taper. MILLING MACHINES. No. 3 KEM.

No. 2 Cincinnati vertical, s. p.
No. 2-B hvy, Brown & Sharpe, s. p.
No. 3-LeBiond, cone d., latest type.
GEAR CUTTERS AND GRINDERS.

On the control of the c

18" Gould & Eberhardt hobber, s. p. 18-H Gould & Eberhardt hob., s. p. No. 1 Adams Farwell hobber. No. 13 Brown & Sharpe. Gleason generators, 6", 11", 18". 10"x36" Landis, self-cont., latest. 12"x32" Landis universal.

5' American, cone drive.
5' Hamilton, cone drive.
3' Cincinnati Bickford, gear b. d.
24' Gang, tapping att., g, b. d.
24' Gang, tapping att., g, b. d.
24' Gang, tapping att., g, b. d.
25' Gang, tapping att., g, b. d.
26' Barnes, 4-1

24" Cincinnati, crank, cone drive. 24" Hendey, friction geared. 26"x26"x7' Gray, one head.

MISCELLANEOUS. Bolt cutter, 1" Landis, dbl. hd. Bolt cutter, 1" Acme, class A. Boring mill, 42" Bullard, 2 heads. Grinder, disc, No. 21 Besly, com-plete, like new.

24"x10' American, grd. hd., latest. 17"x 8' LeBlond heavy duty, q. c. 16"x 8' Hendey, yoke head. 14"x 6' Hendey, yoke hd., q. c.

No. 2 Ohio universal tool and cutter

grinder, complete. No. 3 Ohio universal tool and cutter

grinder, complete. 12"x72" Brown & Sharpe plain. No. 21 Besly disc, 36" complete. universal.

No. 60 Heald grinder with angle.

RADIALS AND UPRIGHT DRILLS.

28" Cincinnati cone drive. 26" Rockford, latest, b. g., p f. 20" Barnes, 4-spindle gang. No. 2 Minster Junior, hvy. duty.

36"x36"x10' Cincinnati, 2 heads, 96"x72"x24' Detrick & H., o. s. 66"x60"x20' Cincinnati, 3 hds.

Brake, box, 42" Dreis & Krump. Punch & sh, 1" No 4 New Doty. Press, 30-ton Lucas forcing. Press. 15-ton Lucas forcing.

FOR SALE BY

Severin-Tripp Machinery Co.,

Severin-Tripp Machinery Co.,
Boring mill, vertical, 82" Niles.
Boring mill, vertical, 72" Betts.
Boring mill, vertical, 48" Pond.
Boring mill, vertical, 48" Colburn.
Boring mill, vertical, 48" Colburn.
Boring mill, vertical, 46" Colburn.
Boring mill, hor., Niles, 44" spdl.
Boring mill, hor., Niles, 6" spindle.
Boring mill, hor., Niles, 6" spindle.
Boring mill, hor., Bernett 4" spdl.
Brake, 6" Ohl, Brauge.
Bulldozer, Wm. & C., No. 3.
Bulldozer, Wm. & C., No. 3.
Handler, Landis 36" X144".
Hammer, 4 B Nazel.

Hammer, 4B Nazel. Hammer, 400 lb. Chambersburg.

Hammer, 409 Ib. Chamberssourg. Hammers, 2 board drop Chambers-burg, 500 lb., m. d. Lathe, 18" x 6" Champion. Lathe, 24"x12" Prentice, geared hd. Lathe, 24"x16" LeBlond. Lathe, 24"x16" G" Greaves-Klusman,

oil country Lathe, 36"x22' Pond, d. c. motor. 25 Church St., New York, N. Y.

25 Church St., New York, N. Y.
Lathe, 42"x28' Putnam, geared hd.
Lathe, 69"x28' Pond.
Lathe, 12"x28' Pond.
Lathe, 12"x38' Pond.
Lathe, 13"x38' X44' Pond.
Pipe machines, 6" & 6" Saunders,
Pipe machines, 6" & 6" Bounder,
Pipe machines, 6" & 6" Bounder, 8" & 8" X44' Pond,
Planer, 36"x18' Pond, March, 13"x18' Yas' Pond,
Planer, 74"x2"x39' Sellers, b. d.
Planer, 76"x28"x28' Pond,
Press, 500-ton United E. & F.
Punches, No. 4 Hilles & J. dbl. end.
Radial d'all, 36" gang, b. d.
Radial, 36" Cin. Bickford, s. p. d.
Radial, 36" Cin. Bickford, s. p. d.
Radial, 36" Cin. Bickford, s. p. d.
Radial, 14" American, s. p. d.
Rotators, 5-ton, 5"f., 25-ton.

Roll, bending 25', top roll 26 Rotators, 5-ton, 5-7#, 25-ton. Shaper, 24" Cincinnati. Shear, alligator, No. 3 Carlin.

FOR SALE BY

Reliance Machinery Sales Company

1405 Brighton Road,

Automatics, Nos. 52, 53 & 55 Acme. Blower, No. 5 Champion, 64" outlet.

Blower, No. 5 Champion, 64° outlet. Blower, Amer. pressure, 451 cz. ft.. Bolt cutter, 4° Acme, class 'A, '2-sp. Boring mill, No. 44 D. & H., floor type, 34° bar. Boring mill, Niles horiz., 44° bar. Boring mill, 42° Bullard, 5 heads. Boring mill, 42° Bullard, 5 heads. Boring mill, 62° Bullard, 2 heads. Brake, 48" Keane, capacity \dagger". Broaches, Nos. 3 and 4 LaPointe. Buffers, 10 h. p. 220-3-60, 3600 r.p.m. Bulldozers, No. 4 Williams & W. Driffs, 26" Barnes, sliding head. Drills, 36" Barnes, sliding head, Drills, 46" Snyder, sliding head, Gear cutter, 36"xlb" G. & E., a. p. d. Grinder, Oliver drill, \$\fomale\$" cap., m. d. Grinder, VPL New Yankee, cap.\fomale\$", Grinder, \$V. PL New Yankee, cap.\fomale\$", Grinder, \$V. 24" Modern plain. Grinder, No. 16 Bealy, double disc. Hammer, 30-A High Speed, m. d. Hammer, 30-B bradley cush. helve, \fomale\$" helve, \fomale\$" and bear the grander of the gra

Hammer, 80 lb. Bradley cush. neive. Hammer, 300 lb. Bradley upright. Lathe, 12"x 6" Seneca Falls. Lathe, 12"x 10" Davis tool rm., q.c.g. Lathe, 14"—28" Fay & Scott gap. Lathe, 14", 6" Seneca Falls, q. c. g. Lathe, 16"x 8" Hamilton, q. c. g. Lathe, 18"x 8" American, g. h., m.d. Lathe, 18"x 8" American, g. h., m.d. Lathe, 18"x 8" L. & S., q. c. g., m. d.

N. S. Pittsburgh, Pa. Lathe, 18"x10' W.-B., g. h., s. p. d., Lathe, 20"x10' Hendey, g. h., m. d. Lathe, 20"x10' Hendey, g. h., m. d. Lathe, 24"x12' Hendey, tie bar. Lathe, 24"x12' Boye & Emmes, q. c. g. Lathe, 34"x12' Leblond, triple grd. Miller, No. 1 Kniebt drillire. Lathe, 45°x12′ Leblond, triple grd.
Miller, No. 1 Knight drilling.
Miller, No. 1 & American plain.
Motor, 5 h. p. Wagner, 229-18.
Pipe machine, 5° 0 2° Williams.
Pipe machine, 8° 0 2° Williams.
Pipe machine, Merrill, 2° to 12°.
Pipe machine, Merrill, 2° to 12°.
Pipe machine, 45° 12° Gray, 1 head.
Planer, 36° 345° 31° Gray. 1 head.
Planer, 36° 345° 31° D. & H., openside
Planer, 46° 345° 31° D. & H., openside
Planer, 46° 345° 31° D. & H., openside
Planer, 46° 345° 31° D. & H., openside
Press. No. 19 Bliss, o. b. i., flywheel,
Press. No. Lucas forcing. Press, No. 19 Bilss, o. b. 1, nywneel. Press, 30-ton Lucas forcing.
Press, Ferracute DD2, o. b. 1, cam, Press, No. 54 Toledo trimming.
Punch, Royersford d. e., cap. 1"x#", arch. iaw, 18" throat.
Punch, Wickes, 48" thrt., cap. 14"x1".
Radial drills, 4' & 5" Prentice plain.
Saws, No. 5 Marvel high apd. 8x6, (2).

Shaper, 24" Cincinnati, b. g. Grank. Shear, 96"x16 ga. Stoll squaring. Shear, 120"x4" Garrison squaring. Tapper, 14" Webster & Perks, 1-spdl. Tapper, 14" Webster & Perks, 2-spdl.

Saw, Racine 6x6 high speed. Saw, American metal swing, m. d. Shaper, 24" Cincinnati, b. g. crank.

FOR SALE BY

Purinton & Smith,

Hartford, Conn.

Pratt & Whitney 14" vertical type surface grinder, with ball bearing spindle and magnetic chuck, excellent condition. SCRAP BALER.

Stanley Works 16"x16".

FOR SALE BY

J. Bleser Mfg. Co.,

16th & Madison Sts., Springfield, Illinois

Air compressor, 12x12 Laidlaw-Dun-Gordon, and 30 h. p., 575 r. p. m., 3-phase electric motor; all for \$500. Lathe, engine, 16x8 G. & K., q. c. Lathe, 14"x6" Monarch, q. c. Miller, No. 2 Hendey universal. Miller, Cinti. No. 3 univ., O. type. Millers, bench. No. 3 Burke; Rockd. Radial drill, 5' Bickford. Shapers, Smith & Mills 16", 12".

FOR SALE BY

United Mchry. & Supply Co., 4640 Newberry Ave., St. Louis, Mo.

Engine & generator set, 312 k. v. a., 440 v., run 3 years	6,000.
Grinder, tool & cutter, Wells, many parts, and accessories, like new	150.
Lathe, LeBlond 17"x6', no screws, chuck, good condition	225.
La he, New Haven, triple geared, 50"x12', good shape	985.
Miller, American plain, No. 12, quick change feeds, fine.	425.
Punch, No. 7 Rverson-Kling, 60" throat, 12" thru 1", Lysholmn table.	2750.

FOR SALE BY

McDonald Machinery Co., 1531-33 N. Broadway, St. Louis, Mo.

McDonald Machinery Co., 11
Bolt threader, Acme 2 and 3 heads.
Chain hoists, Vale & Townel & 2-ton
Clock, electric time system.
Demagnetiser, Walker,
Drills, Bash 18-spindle.
Drills, Baker,
Drills, Baker,
Drills, H. & W., Kokomo I-spdl.,
Sipp I & 2-spdl., h. s., b. b.
Drills, H. & W., Kokomo I-spdl.,
Sipp I & 2-spdl., h. s., b. b.
Drills, 20" 24", 26 & 25" b. g., & tapFiling machine. Rearwin, floor typeFurnace, Holcroft 28 k. w. annealing.
Gear cutters, No. 3 B. & S. 88".
Gear hobbers, Barber-Colman No. 12.
Grinder, Heald No. 69 cylinder.
Grinders, American No. 2 surface;
Blount, 20" wet, (3): Pratt & W.
14" vertical surface; Ott 5"x18";
Norton 6"x32" plain; Wilmarth &
Morman No. 2 surf.; Modern int'l.
Hack saws, 434, 686 & 6 Racing Jrs.

Hack saws, 484, 686 & 8 Racine Jra;
Alkins & John Hall State Hall

Milling and drilling mches., Knight No. 14 with p. f., rotary att. Milling machines, Kempsmith No. 2; Ohio No. 20 plain; Becker "SD" vertical, rotary table, 17200 lbs.; American No. 1½ universal; B. & S. No. 3 vert., 2 p.d., with rotary tbl.; Ohio 34: LeBlond No. 3-H plain; Brown & S. No. 3 pl.; Cincinnati; No. 2 pl. and Becker No. 4-B vert. Pipe machine, Curtis 3", m. d. Planers, Gray 28"×28"×6. 1 head;

No. 2 pl., and Becker No. 4-B vert. Pipe machine, Curtis 3", m. d. Planers, Gray 28"x28"x8". 1 head; Whitcomb - Blaisdell 24"x24"x8". Punches, Wetterhahn 18", throat 3" in 3"; Williams & White No. 18, double end punch and shears. Punch presses. Blics No. 18 and

Punch presses, Bliss No. 18 and Toledo No. 1: Swaine Nos. 29 33 and 37 o.b.i.: Rockford No. 3, o.b.i. Pyrometer, Thwing elec.. with rec. Rivet spinner, Grant 3/16".

Rivet spinner, Grant 3/16".

Screw machine, Gridley 1-spdl. 24" auto.; Cleveland 14" auto.; P. & W. No. 24 hand; Foster No. 3 hand; Woods No. 2 tilted turret head; Foster No. 0; Bardons & O. No. 7; National-A. No.32 auto., 4-sp., m.d. Shapers, Springfield 12"; Whipp 16", 226"; 14" Steptoe; S. & M. 13"; S. & M. No. 0; Cincinnati 30", b.g. Shears, 60" thrt. rotary slitting, (2). Tanoning machine, Garvin No. 2.

Shears, 60" thrt. rotary slitting. (2 Tapping machine, Garvin No. 2, Welders, 20 k. w. spot, Winfield. Welders, butt, Federal, \$" rds.

FOR SALE BY

Nelson Machinery Co.,

Bolt cutter, 2" Acme, style A, sgl. Compressor, Gardner Rix 8x6 duplex Drill, Anerican 4" radial. Drill, Barker 25" sliding head, new, Gasoline engine, 40 hp, DuBois hor, Hack saw, Peerless 9x9, belt drive, Lathe, Gardner No.4 polishing, b.b.

123 N. Pearl St., Green Bay, Wis.

Lathe, 28"x18' New Haven, h. s. Miller, Kempsmith No. 2‡ plain. Punch & s., Royersford No. 3 dbl. Punch & shear, single, Williams-White No. 14.

Riveter, Hanna 50-ton pneumatic, at 100 lbs, pressure, 10' throat.

FOR SALE BY

The Central-West Machinery Co. 116-118 E. Water St., Cincinnati, O.

the central at ear interminet.	, -
Drill, 20" Aurora, power feed,	
back geared	80
Drill, 20" Aurora, tap, att	85
Drill, radial, 3' Mueller	250
Grinder, 10"x30" Landis	125
	350
Hobber, No. 3 Farwell, 12x36"	450
Lathe, 14"x12' Carroll & J	178
Lathe, 18"x 8' Sebastian	100

FOR SALE BY

Foster Machinery Company.

Band saw, 24" Woods. Boit cutter. H" Acme. Boring mill, vertical. 42" Bullard. Grinder, No. 60 Heald, cylinder. Hack saws, 12x12 Racine. Lathe, 16"x6" Monarch. Miller, No. 00 Brown & S., hand.

10203 Quincy Ave., Cleveland, O.

Planer, 28"x28"x8' Gray. Press, No. 3 Stiles. Riveter, High Speed 2A. Shear, alligator, Canton, cap. 14' sq. Shear 12'x16 ga., Loy & Nawrath. Shear, 38"x16" gap, foot. Trolleys, 1-beam, 1 & 2 ton.

FOR SALE BY

The Reeve-Fritts Co., 558-560 W. Washington Blvd., Chicago, III.

Drill, 20" Rockford, w. & I. feed. Drill, 24" Mitwaukee, b. g., p. f. Drill, 4-spdl, Bart, \$\frac{y}{c} \text{cap.} Lathe, No. 2 Stark precision. Lathe, 10" 4" Star, c. r., chuck, Lathe, 15" x6" Sidney, q. c. g. Lathe, 18" x6" Economy, p. c. g. Miller, No. 2 Rockford, plain, h. d. . Washington Blvd., Chicago, Ill. Miller. No. 3 Cincinnati, plain. Press. No. 3 Rockford, o. b. i. Press. No. 3 Rockford, o. b. i. Press. No. 5 American Cun, o. b. i. Press. No. 5 Consolidated, o. b. i. Press. No. 6 Consolidated, o. b. i. Pipe machine, 2" Harekii. Pipe machine, 2" Merrill. Pipe machine, 12" Curtis & Curtis. Shaper, 16" Economic, crank. Shaper, 16" Cincinnati, b. g.

FOR SALE BY

Clark Machinery Co., 1235 St. Clair Ave., Cleveland, O.

Lathe, 24"x16" Schumacher & Boye.
Milling machine, Ohio universal No. 20.
Milling machine, American universal No. 1½.
Planers, Gray 28"x28"x7", 28"x28"x8" and 42"x42"x10",
Shaper, 16" Ohio and 16" Steptoe b. g.
Spinning lathes, Prybibi 18" and 22".
Screw machines, Warner & Swasey Nos. 6, 4, and 2.
Screw machines, Foster No. 6, power feed to turret and cut-off.

FOR SALE BY

Schmitz & Co.,

Bolt threader, Geometric 4".
Drill presses, 21", 20" and bench,
Hack saw, power, Marvel, No. 1.
Lathe, 10"25" M. M. Co., chuck.
Lathe, 24"x12" Lodge & S., q. c. g.

35 S. Clinton St., Chicago, Ill.

Mortiser, hollow ch. Greenlee. 1 "cap. Polishing lathes, Brown & Sharpe. Punch press. Farrell, 8" stroke. Riveting, Williams & White No. 3, 7/16" capacity.

FOR SALE BY

A. M. Stochr Machinery Co., 418 Mid-City Bank Bldg., Chicago, Ill.

Boring mills, 20" Bullard; 60" & 12' Niles; all have 2 heads. Brake, 8' Dries & Krump, 10 gauge.

Compressors, 12 different sizes. Corrugating outfit, Bertsch corrugation shear and Robinson corrugating rolls.

Engraving machines, 3 Gortons. Furnaces, melting, for soft metal and aluminum, also cyanide. Gear cutters, 72" Brown & Sharpe; 60" Gould & Eberhardt; and others. Lathes, 18x8 Barnes, hvy. duty; 11"

Rockford; and others.

Milling machines, plain & universal; also No. 29 Van Norman, duplex.

Oil extractors, centrifugal, (8). Punch presses, No. 16 Bliss horning:

Punch presses, No. 16 Bliss norming; No. 34 Bliss arch., and others. Punch & shears, No. 3 Long & A., d. e., ¶ 'ftru ¶'; No. 14 ∰, d.e., 15" throat; No. 5 Long & A., d. e. Riveters, Nos. 2-A, 3-A, 4-A & S. High Speed; No. 8 Stimpson auto.

for split grommets & eyelets rivets. Saws, 9x9 Sterling high speed; 12" band, and others.

Screw machines, (2); Nos. 52 & 53 Acme; other plain and automatic. Welders, both spot and burt. Wire straightening machines, (5). Also other machinery.

FOR SALE BY

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Drill, No. 1/2 Avey 2-sp., b b., bench.
Drills, 24 & 27 Cincinnati.
Drill, No. 25 Foote-Burt high speed,
ball bearing.
Drill, 3 Morris radial, z. p., g. b.
Drill, 4 American triple purpose rad.
Drill, 4 Carlton plain radial, t. and l.

pulley, gear box.
Drill, 5' Dreses radial, s. p., b. b.
Drill, 6' Cincinnati-Bickford plain

radial, s. p., g. b.
Drill, 11' Lynd-Farquhar (wall).
Drill, No. 30 Natco multi spindle.
Drill, 28" Barnes all-grd., 4-spindle, Gear cutter, 8" Gleason generator. Gear cutter, 36 BM. Gould & E. Grinders, 3"-6"-10" Norton plain.

Grinders, 3".6"-10" Norton plam. Grinder, 12" Cincinnati universal. Grinder, No. 2 Norton cutter & tool. Grinder, No. 60 Heald cylinder. Grinder, No. 65 Heald cylinder. Grinder, 14" Pratt & W. surface, b.b.

Grinder, No. 6 Besly disc.
Lathe, 14'XiV L. & S., s. p. or m. d.
Lathe, 16'X 6' Lodge & Shipley.
Lathe, 16'X 6' Lodge & Shipley.
Lathe, 16'X 6' Le Blond.
Lathe, 16'X 6' Le Blond.
Lathe, 24'XiV American, s.p. or m.d.,
Lathe, 24'XiV Lodge & Shipley.
Lathe, 30'XiV L. & S. s. p. or m. d.
Lathe, 36'XIV L. & S. s. p. or m. d.
Lathe, 36'XIV Pulman, geared head, Lathe, 36"x34" Futnam, geared head, s. p. d., late type.
Lathe, 38"x30" Schumacher-Boye.
Lathe, 38"x40" Schumacher-Boye.
Lathe, 38"x40" x4" x6 & 6" Ohio,
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Planer, 40"x4" x12" Fond,
Planer, 40"x4" x12" Fond,
Planer, 40"x4" x12" Fond,
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Planer, 50"x4" Billings & Spencer
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Presses. No. 3. & 5 V. & O. incl.

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Gridley. Screw machines, auto. \$". \$". 11", 21", 42", 46" Cleveland; 16" G. & E. Shapers. 16", 20" & 24" Cincinnati. Shaper, 20" American. Turret machines, 14" 22", 34" Acme. Turret machines, 21" & 34" J. & L.

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Lathe, 15"x6' Willard tool room, brand new	435.
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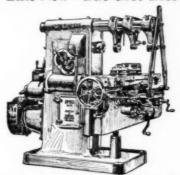
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28" Superior Drill, power feeds, back gears, sliding hd.	270.
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No. 3 LeBlond Plain Miller, heavy-duty, good condition	485.
No. 3 Brown & Sharpe Plain Miller, good condition	595.
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No. 3 Kempsmith Plain Miller.
No. 3 Becker Vettical Miller.
No. 24 EeBlond Plain, cone drive.
No. 24 Kempsmith Plain Miller.
No. 1 Cleveland Plain, S. P. D.
No. 13 Garvin Plain Miller, (2).
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12*x72* Norton Cylindrical Grinder.
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QUALITY Rebuilt

Milling Machines

No. 3 Cincin. univ., cone pulley complete. No. 2 Cincinnati univ., cone pulley comp. No. 4 Cincinnati univ., cone pulley comp. No. 1½ Owens univ., cone pulley comp. No. 1½ Rockford univ., c. p., compl. No. 5 R. K. LeBlond plain, sgl. pulley. No. 4 Cincinnati pl., cone pul., late type. No. 3B-heavy B. & S. plain, sgl. pulley. No. 3-B B. & S. plain, single pulley. No. 3 Kempsmith plain, cone pulley. No. 3 Cincinnati plain, cone pulley. No. 3 Hendey plain, cone pulley.

Radials and Upright Drills 21 American triple grd. pl., radial, c. p. 51 Reed-Prentice plain radial, motor drive. 21/21 Carlton ball bearing sensitive radial.

3¹ American Tool Wks. b. b. sen. radial. No. 1 and No. 3 W. F. & John Barnes horizontal radials.

36 Cincinnati-Bickford upright drill. 32 Reed-Prentice upright drill, s. p., t. a. 28 Cincinnati-Bickford upright drill, genr

box drive, tapping 28º Aurora upright drill

Shapers and Planers

24" Kelley heavy duty b. g. crk. shaper. 24th Steptoe triple geared shaper. 20° Cincinnati hvy. duty b.g. crk. shaper. 20" Steptoe hvy, duty, b g. crank shaper. | 38"x38"x18' Niles planer Gear Machinery and Grinders

No. 12 Barber-Colman gear hobbers. 18-H Gould & E. high duty gear hobbers. No. 5-A Lees Bradner gear hobbers. No. 3—26" B. & S. auto. spur gear cut. No 70 Heald int.grinder, late type, comp.

Capitol internal grinder, collet attach. No.60 Heald cyl grinder, late type, compl. No. 120 Gardner ball bearing dbl. disc. Nos. 2 and 6 Garder disc grinders.

369x10' Fay & Scott standard ch. gear.

30"x34' American Tool Works, q. c. 30"x17' Houston, Stanwood & Gamble heavy duty, quick change. 27°x14' R. K. LeBlond, heavy duty,

quick change, late type.

No. 21/2 R. K. LeBlond plain, cone pul. No. 2-heavy B. & S. plain, cone pull. No. 2-heavy B. & S. plain, cone pulley. No. 2-Y Brown & S. plain, cone pulley. No. 2 R. K. LeBlond plain cone pulley. No. 1½ Cincinnati plain, cone pulley. No. 0 Cincinnati plain, cone pulley.

No. 3 Brown & Sharpe vertical, single pulley, power rapid traverse

28" Cinti. semi-auto, duplex milling mche. No. 2 Bristol hand mill, mche., b. b. No. 7 Becker Lincoln mfg. milling mche. 36"x20"x8' Ingersoll slab, 4 heads.

26 Reed-Prentice upright, gear box dr. 24" Rockford upright drill press.

22" W. F. & John Barnes upright. 25" W. F. & John Barnes upright, s. h. 20° Barnes all geared drill, self oiling.

No. 0 Fox multiple drill press No. 12 Pratt & Whitney multiple drill. No. 310 Baker Bros. hvy. duty drill press.

 2, 3 and 4-spindle Henry & Wright ball bearing drill presses. 20" Niles-Bement-P. b.g. crank shaper.

16" Bausch & Harris crank shaper. 36"x36"x14' Amer. planer, 2 hds on rail. 38"x38"x18' Niles planer, 2 hds. on rail.

Walker single stroke surface grinder, agnetic chuck.

magnetic cruck.
84* Diamond face grinder, motor drive.
6*x32* and 10x36* Norton plain.
8*x30* Modem pl. self-contained grinder.
No. 2—12*x36* Cincinnati plain grinder.
No. 1 and 3 Brown & S. univ. grinder.
No. 1R K, LeBlond univ. tool & cutter gr. No. 2 Oakley univ.tool & cutter grinders.

Engine and Turret Lathes

26°x16' Walcott heavy duty, q. e. 26°x8' Walcott heavy duty, q. c. 248x12! Reed-Prentice geared hd., q. c. lathe, arranged for motor drive. 24"x 101 Boye & Emmes, quick change.

EASTERN MACHINERY

We also Buy machinery.

nd-Guaranteed Machine Tools

Engine and Turret Lathes-Cont.

24* Gisholt turret lathes, late type

No. 4 Millholland turret lathe.

37 x 36" Jones & Lamson turret lathe. 21/4"x 26" Jones & L. dbl. spdl. turret lathe. 2/2"x 26" Pratt & Whitney turret lathe. Nos. 2, 4 & 6 Warner & S. turret lathes. Nos. 2 and 4 Foster turret lathes.

No. 4 Bardens & Oliver turret lathes. No. 4 Brown & S. wire feed screw mch.

No. 2 S. P. Garvin turret screw mchs. 1 Briggs turret screw machines. 21 x 10 R. K. LeBlond mfg. lathe,

21 x 101 R. K. LeBlond heavy duty, q.c. 20"x 12' Lodge & Shipley, q. c. 19"x 12' Sidney, hvy. duty, q.c., tap. att. 18"x 12' South Bend standard change. 18"x12" South Deng standard crauge.
18"x8" Reed-Prentice geared head, q. c.
18"x8" Mueller hvy. duty, q. c.
18"x8" Mueller hvy. duty, q. c.
18"x8" K. L. Ellond hvy. duty, q. c.

16"x8" Hendey yoke head, q. c. tap. att. 16"x6" Lodge & Shipley, q. c. 16"x6" R. K. LeBlond q. c. 14"x6" Hendey yoke hd., q. c., taper att.

14"x61 Lodge & Shipley q. c.

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4-way turret tool post.

Miscellaneous Air Compressor, 10*x10* Chicago-Pre-umatic Too! Co*r. class N. S. B., b. d. Air Compressor, 16*x12*x12* Laidlaw double stage, steam driven, cap. 700 cu. ft. Arbor Presser, No. 55 Atlas power and No. 4 Atlas compound geared. Arbor press, No. 4 Greenord.

Press, 15-ton Lucas power forcing, belt drive.
Bolt Cutters, 1*, and 3* Acme, class A.
Bolt Threading Machines, 1* and 1½* Landis with lead screws.

Bolt Threading Machines, 1° and 1½° Landia with lead scr Pipe machine, 6° Merrill, power. Boring Mill. 24° Bullard vertical, rapid production type. Boring Mill. 76° Bullard vertical, 2 heads, cone pulley. Boring Mill. 36° Gisholt vertical, 2 heads. Boring Mill. 36° Gisholt vertical, surter head, motor drive. Boring mill. 37° Niles Tool Works, vertical, 2 heads, Broaching Machines, No. 2 and No. 3B J. N. LaPointe. Hammers, 40 and 60-lbs. Bradley rubber cushioned helve. Hammers, 40. Bradley rubber cushioned helve.

Hammer, 30-lb. Bradley upright power.

Hammers, 100 and 200-lb. E. W. Bliss board drop.

Hammer, 600-lb. Chambersburg steam.

Hammer, 600-lb. Chambersburg steam.

Keyseater, No. O0 Baker Bros., capacity ¾* keyways.

Keyseater, No. O1 Callin, capacity ½* lo 1½* keyways.

Keyseater, No. Callin, capacity ½** lo 1½* keyways.

Press., No. 92-D Toledo, double crank geared, 48* between uprights.

Press., power, No. 6 Consolidated, o. b. i.

Press., power, No. 5 Toledo, o. b. i.

Press., power, No. 4 Niagara, 20**, capacity 14 gauge.

Shear, power, No. 42 Niagara 42**, capacity 14 gauge.

Shear, power, No. 242 Niagara 42**, capacity 14 gauge.

Shear, power, No. 242 Niagara 42**, capacity 24 gauge.

Shear, power, No. 242 Niagara 42**, capacity 24 gauge.

Shear, power, No. 242 Niagara 42**, capacity 24 gauge.

Tapping Machines, Garvin automatic, Nos. 1, 2 and 2-B. G.

And many others; - Send for our new stock list.

408 E. Pearl St., CINCINNATI, O.

What have you to Sell? ery.



The discriminating PURCHASER will find our Rebuilt Tools MACHINES OF QUALITY, backed by our GUARANTEE

BORING MILLS

42^a Bullard Vertical Turret Lathe, New Era Type, with lubrication system and threading attachment. 42^a Gisholt Rapid Power Traverse,

one turret head, plain head. 51* Bullard Standard Turning and

Boring Mill.

54 Bullard Boring and Turning Mill,

rapid production type. 81 Cincinnati Boring Mill, rapid trav-

ense, 2 swivel heads.
No. 1 Cleveland Horiz., sgl. pulley dr.
No. 0 Giddings & Lewis Horizontal,

single pulley drive.

DRILLS

Nos. 217, 310, 314 Baker. 32° Cincinnati Bickford, with tap. att. 36° American Sensitive High Speed

Radial, tapping attachment. 3½ American Pl. Radial, gr box dr. 6 American Radial, gear box drive.

GEAR CUTTERS 36S Gould & E. Spur Gear Cutter. No. 12 Barber-Colman Gear Hobbers.

36H Gould & Eberhardt Gear Hobber 6" Gleason Bevel Gear Generator. 11" Gleason Bevel Gear Generator, 60" Brown & Sharpe Gear Cutter. 72" Brown & Sharpe Gear Cutter.

GRINDERS

6x32 Norton. 10x50 Norton.

Taylor & Fenn Internal Grinder. No. 2 Brown & S. Surface Grinder. No. 10 Blanchard Surface Grinder,

motor in head. No. 16 Blanchard, Floor Motor Drive,

No. 22 Heald Rotary Surface Grinder, 12" magnetic chuck.

No. 255 Heald Rotary Surface Grinder, 8" or 12" magnetic chuck.

Rotary Surface Grinder, chuck.
Rotary Surface Grinder, 21/4x26 Cincinnat

LATHES

14x6 Hendey, with taper attachment and relieving attachment, q. c. f. 16x8 LeBlond, taper att., cone drive. 20x10 Reed-Prentice, geared head,

20x10 Reed-Prentice, geared head, single pulley. 24x12 Schumacher & B., q. c.f., c dr. 36x10 American, geared head, with

taper attachment. 42x32 American, geared head, with

35 h. p., d. c. motor
MILLING MACHINES
No. I-B Brown & Sharpe plain, single

pulley drive.
No. 2 Kempsmith plain, cone drive.
No. 3 Cincinnati Universal, with di-

viding head, single pulley drive.
No. 4 Cincinnati Plain High Power,

single pulley drive.

No. 4 Cincinnati Universal, with dividing head, cone drive.

No. 3 Cincinnati Vert., sgl. pulley dr. No. 4 Cincinnati Vert. sgl. pulley dr. No. 5 Cincinnati Horizontal, rectangular overarm, single pulley drive.

PLANERS 24*x24*x10' Gray, I head on rail. 36*x36*x8' Cleveland Openside, I side head, I rail head. 36*x36*x20' Cincinnati, 2 rail heads,

6"x36"x20" Cincinnati, 2 rail heads, 1 side head, box table, rapid power traverse, forced lubrication.

48"x48"x12' Cleveland Openside, 2 hds. on cross rail, I side hd., belt dr. SHAPERS

15º Potter & Johnston Univ., cone dr. 16º Gould & Eberhardt, cone drive.

24⁸ American, cone drive, 28⁸ American, cone drive.

TURRET LATHES

No. 4 Wamer & S., pwr. fd. to turret, No. 3-A W. & S., comp. ck. equip. 21/4x26 Cincinnati Acme, cone drive. 31/4x36 Cincinnati Acme, geared head.

This is a partial list of our equipment. In addition to above list we have several hundred machines going through the process of rebuilding.

A lical Machine is an Dependable as the Dealer Who Salle it.

A Used Machine is as Dependable as the Dealer Who Sells It THE MOTCH & MERRYWEATHER MACHINERY [O.

CLEVELAND

TIORTED

CINCINNATI

PITTSBURGH

Good Used Machines,

PRESSES

BLISS No. 11/2 and 31/2-A Toggle Drawing Presses. BLISS No. 4 Stiles Press, flywheel type. BLISS No. 31 Overhanging Flywheel Press. BLISS No. 61 Flywheel Press, weight 2000 lbs. BLISS Stiles No. 3 Geared Press. BLISS No. 9-C Double Crank Straight Side Press. BLISS No. 741/2 Straight Side Press. STOLL No. 68 Straight Side Geared Press. TOLEDO No. 54 Geared Straight Side Press. TOLEDO No. 96-F Double Crank Geared Press. TOLEDO No. 551/2 Straight Side Trimming Press. TOLEDO No. 5 Inclinable, flywheel. TOLEDO No. 666 Knuckle Joint 1000-ton Press. TOLEDO Nos. 1641/2 and 494-C Toggle Drawing Presses. CONSOLIDATED No. 56 Flywheel Trimming Press. CONSOLIDATED No. 165 Flywheel Double Crank. FERRACUTE EG-6, 100-ton Embossing Press. FERRACUTE No. DD-66 Cam Drawing Press. FERRACUTE No. DGG-55 Straight Side Reducing Presses. FERRACUTE No. DGG-56 Straight Side Reducing Presses. ZEH & HAHNEMANN No. 20 Percussion Press. BLISS Cut Back Frame No. 73% Press.

STRUCTURAL SHOP EQUIPMENT.

WILLIAMS-WHITE Nos. 0, 1, 2, 4, 6, 7, 28 Bulldozers.
CANTON No. 5 Alligator Shear, 3" capacity.
CLEVELAND Punch Style "G". 42" throat, capacity 2" thru 1".
TOLEDO Squaring Shear 8', ¾" capacity, 15" gap.
ROCK RIVER Punch 30" throat, 1" thru 1", motor drive.
LONG & ALLSTATTER Punch, 2" thru 1", arch. jaw.
WILLIAMS & WHITE No. 14 Double End Punch and Shear,
25" throat, capacity 1¼" thru 1".
No. 34 LENNOX Rotary Bevel Shear, capacity ¾", motor drive.
No. 5 QUICK WORK Rotary Shear, motor drive.
HILLES & JONES No. 3 Guillotine Shear, Cap. 2½" sq.
HIGH SPEED Riveting Hammers, 3-A, 4-A, 5-A & 6-B,
SOUTHWARK Hydraulic Riveter 75-ton, gap 8'6".
HANNA 20-ton Pneumatic Riveter, 5' gap.

No. 3 QUICKWORK Rotary Shear, with circle shear attach.

D. C. OVIATT & COMPANY, 2168

HANNA Riveter, 50-ton, 8'6" gap.

s, Some Rarely Available

UNUSUAL EQUIPMENT.

AMERICAN 24* Crank Shaper.
ERIE 800 lb. Single Leg Steam Hammer.
BEAUDRY 50 and 200. lb Power Hammers.
BRADLEY 75 lb. Upright Helve Hammer.
GARVIN No. 2 Back Geared Automatic Tapping Machine.
LANDIS 1* Double Head Bolt Cutters.
LANDIS 2* Bolt Cutter, Lead Screw.
LANDIS 1** with and without lead screw, (2).
GISHOLT 24* Lathe, 64* hole in spindle, m. d.
18* LIBBY Lathe, motor drive.
18* x10* BOYE & EMMES Engine Lathe.
WARNER & SWASEY No. 4 Turret Lathe.

WARNER & SWASEY No. 4 Turret Lathe. CINCINNATI-ACME 3½*x36* Flat Turret Lathes. CLEVELAND ½* Model "B" and "G" Automatics. COLBURN D-3 Drill Press, gap 3* steel.

COLBURN D-3 Drill Press, gap 3" steel. NILES 42" Car Wheel Borer, motor drive.

GREENLEE Universal Joint Borer, 12¹ table with automatic feed, 12-spindles, motor driven.

GREENLEE Single Spindle Universal Borer. INGERSOLL-RAND Compressor, N. E. I. 121/4"x12".

AMERICAN TOOL & MACHINE CO. Oil Separator, large size. CHICAGO Pneumatic Air Compressor 10*x10*.

B. & S. No. 3-36 Automatic Gear Cutter.

BRIGGS Millers 34", type B, (10). DINGS Magnetic Separator, with M. G. Set.

ROOTS P. H. & F. M. Blower, size 5, 14* exhaust with extension base for motor drive.

DILLON 7½ H. P. Electric Grinder, ball bearing.

MOLINE 13-D "Hole Hog" 9-spdl., No. 4 Morse Taper, 12x84* tbl. COLBURN 36* Vertical Turret Boring Machine, swivel turret slide. 30* diameter. 3 jaw chuck in table.

EUCLID Electric Traveling Crane, 3-ton capacity, 41' span.

LUCAS 30-Ton Power Forcing Press. FEDERAL Spot Welder, Nos. 312-B and 320-B.

Some of the Above Equipment

is located in the plant of the Kenova Mine Car Co., Kenova, West Virginia, which we are liquidating.

SEND FOR COMPLETE LIST

68* Lakeside Ave., CLEVELAND, OHIO

Bath's Guaranteed

Boring Mills-Vertical

428 Bullard 2 swivel heads.

42" Sing. 2 swivel needs, 42" King. 2 swivel heads, rapid traverse. 44" Baush, 2 swivel heads. 42", 48" and 54" Colburn boring mills, 72" Pond, 2 swivel heads, heavy, 72" Niles-Bement-Pond, rapid traverse,

96* Niles, 2 heads, very good.

Boring Mills-Horizontal

3 bar Binsse, table type. 3½ bar Rochester, floor type.

Cranes

5 to 25 ton, all spans, both a. c. & d. c.

Drills

4-spindle Moline rail drill, 11/2" capacity.

31 Prentice radial.

No. 1, 8' wall radial. 28' Cincinnati, sliding head.

30* Aurora, sliding head. 24* No. 25 Foote-Burt, with compound table.

Forging Machines and Bulldozers

1½", 2½" and 3" Ajax Upsetters. ¾", 1¼" and 1½" Acme steel bed Upsetters. 4 & 5 Williams & White Bulldozers.

250-ton Mesta Steam Hydraulic, 85%.

Grinders

84ª Diamond surfacer.

18x96" Norton plain.

17x36" Landie universal.

No. 2 Norton universal tool and cutter. No. 20 Safety electric floor grinder, 10 HP motor, 32*x4* wheels.

Various electric floor grinders and grinding stands.

Keyseaters

No. 00 Baker, capacity ¾*x8*, tilting table.
No. 1 Baker, capacity 1*x12*, tilting table.
No. 5 Mits & Merrill, 25* str., cap. to cut keyways up to 3½* wide.
No. 2 Baker Bros. 2*x18*, tilting table.
All Keyseaters have large equipment.

Lathes

14" to 18"x6'-9' beds, tool room. 20"x10' Boye & Emmes, quick change, double back geared. 30"x14' Boye & Emmes, double back geared.

36"x 14" Schumacher & Boye, triple geared.

48"x26' Bridgeford, grd. hd., t. a. 48"-60"x34' Houston, Stanwood & Camble, grd. hd., mtr. dr.

60°x20° American, triple genred.

CYRIL J. BATH & CO., E. 70th &

ed Cleveland Stock

Hydraulic Equipment

175-ton R. D. Wood 4-column Flanging Press. Morgan Hydraulic Riveter, 8' 6' gap. Wood and Bement-Miles Hydraulic Riveters, 10' 6' gap.

Tumbling Barrels

Several sets 18"x48" steel lined, square, with roller bearings and exhaust.

Milling Machines

Style" B" Cooley & Edlund, table 54*x11½*, (2). 20*x7½*x18* Oesterlein plain, belt drive.

No. 1 Rockford plain, back geared, 22*x5½*x15*.

No. 2-B heavy Brown & Sharpe plain, 28*x10*x19*.

No. 3 Handey, geared head, plain.

No. 4 Cincinnati high power miller, table 64½*x16½*.

Becker miller, model "C" table 14*x54*.

5-A Lees-Bradner Thread Miller.

No. 249 Pratt & Whitney Die Sinkers.

Planers and Shapers

22°x24°x57° Fitchburg, single head.
30°x30°x8° Gray, single head.
60°x60°x20°C Gincinnati, 4 heads, 3 speed, very good.
48°x48°x14' Hamilton, 4 heads.
12° Springfield, crank shaper.
44° Rockford and Smith & Mills shapers.

Punches and Shears

84* throat, Long & Allstatter, capacity about ¾* thru ¾*.
Kling Bros. horn press, 60* horn, flywheel 50* dis. 6½* face.
48* throat No. 4 Southwark, capacity 2*x 1¼*.
36* throat Lennox rotary shear, capacity about ½* plate.
15* throat No. 14 Williams & White.
Lennox rotary bevel shear, ¾* capacity.
6* Multiple punch, shear or press, ¾* capacity.

Turret Lathes and Screw Machines

3*x36* Jones & Lamson. No. 4 Bardons & Oliver.

MISCELLANEOUS

Acetylene Generator. Blower, No. 4 Root, motor drive. Blowers, Nos. 1 & 2 Buffalo Forge. Bolt cutter, Acme, 1º capacity. Chain Hoista, ½, 1, 1½, 4 & 6 ton. Cold Saw, No. 4 Cochrane-Bly. Gear Cutter, 36° Gould & E. Hammer, 100 lb. Bradley helve. Pipe Machine, 4* Jarecki. Press, No. 66 Consolidated, 4* str. Press, 30 ton Lucas forcing. Pyrometer, Brown. Slotter, 46* Niles-Bement-Pond, motor drive.

& Machinery Av., N. E., Cleveland, O.

Our June Offerings

ENGINE LATHES

14"x 6' LeBloud, l. c. g. and chuck. 14"x 6' Hamilton. 14"x 6' Bradford, c. r., q. c. g. 14"x 6' Porter, compound rest and

taper attachment, l. c. g. 16"x 6' South Bend, compound rest, complete

16"x 8 Lodge & Shipley, old style, compound test, q. c. g. 16"x 8' Hendey, c. r. and

16"x 8' Hendey, c. r. and t. a., q. c. g. 16"x 8' Bradford, c. r., loose change

gear. 16"x 8' Monarch, compound rest,

standard pattern. 18"x 8' Boye & Emmes, c. r., q. c. g. 18"x 7' Fulton heavy duty friction hd. pl. turning lathe, pan bed, dbl. tool post and countershaft, new. 18"x 8 Prentice, compound rest,

1. c. g., chuck.

18" x8" Porter, 4-step cone, s. b. g.,
q. c. g. engine lathe, complete, new.

18" x 8" Superior, c. r., q. c. g.

18" x10" Star, 4-s. c., s. g., with 16"

4-jaw ind. chuck. 20"x 8' Reed friction head, with turret on carriage.

20"x10' Boye & Emmes, c. r., q. c. g. 24"x10' Greaves & K., c. r., q. c. g. 24"x10' Boye & Emmes, c. r., q. c. g

TURRET LATHES AND SCREW MACHINES

2"x24' Jones & L. g. h. flat turret. No. 00 Brown & Sharpe auto., (2). No. 0 Brown & Sharpe auto., (2). 12" W. & S., friction head. 12" W. & S., plain head, (4). 12" W. & S., friction head, with set-

over turret. 14" W. & S., friction head, (2). 16" W. & S., friction head. No. 4 Warner & Swasey, p. h., a. c.

and b. f. No. 2 Warner & Swasey, p. h., a. c.

and b. f. No. 4 Warner & S., g. f. h., a.c. and

No. 3 Foster g.f.h. turret screw mch., with p. f. carriage and turret.

24" Cleveland model "A" auto. screw mch., with 5-hole turret.
No. 55 Nat'l Acme 4-spdl, auto., (3).

"Cleveland model "A" auto.

screw mch., with 5-hole turret. 18" Libby, factory rebuilt. No. 2-G Brown & Sharpe auto-

matics (2).

No. 2 Brown & Sharpe turret forming (2). 1"x7" Millholland, pl. hd., auto. ck.,

bar fd , hand fd., cross slide and turret, complete, new. 1"x7" Millholland turret screw mch., pl. hd. auto. ck., bar feed hand fd. cross slide, with power fd.tur., new.

DRILLING MACHINES

American sensitive radial with t, a. and elevating table. Aurora W. & L., square base,

stationary head.

25" W. F. & J. Barnes, sliding head, back geared and power feed. arm Fosdick & Holloway plain radial, with t. a.

3' Western, with speed box, tap, att. 6' Western, with speed box, tap. att. 3' Dreses, cone drive, tap. att. American triple purpose, with

speed box. Cincinnati sliding head, b. g.

and p. f.

24" Aurora sliding hd., b.g & p.f.(2). 38" Niles, sliding hd., b. g. and p. f.

20" Superior W. & L. square bases stationary head.

14 3-spindle Henry & W., h. s., b. b. 14" 4-spindle Henry & W., h. s., b. b. No. 22 Colburn, sgl. sp., hvy. duty, 14" cap., with solid spindle and flange for receiving multiple drill

heads, new, (2), No. 44 Colburn, sgl. sp. heavy duty, 24" cap., with solid sp. and flange for receiving multiple drill heads,

new. (2). Colburn horizontal duplex drill, 22" cap, with rotating table, arranged

for motor drive, new. drill with C spindle, new.

The Strong, Carlisle & Hammond Co., †

gs At the Right Prices

MILLING MACHINES

No. 0 Bickett, hand, bench type, (3). Toledo hand milling machines. No. 1 B. & S., cone dr., universal, complete.

No. 1 Brown & Sharpe vertical. No. 4 Brown & S., cone drive, univ. No. 3-B heavy B. & S. plain, con-

stant speed, (2). No. 12 B. & S. cone drive, univ.

Type C Becker vertical, constant speed drive.
25"x7\frac{1}{2}"x18" Qesterlein universal, vertical attachment.

No. 2-B B. & S. constant speed plain, taper nose spindle with Dickow dividing head. No. I-Y Brown & Sharpe plain.

METAL CUTTING TOOLS AND SQUARING SHEARS No. 3 Atkins band saw, belt driven, new, (2)

GEAR CUTTERS AND HOBBERS

No. 18 Gould & Everhardt vertical, 26" No. 3 Brown & Sharpe automatic for spur & spiral. SHAPERS AND PLANERS

16" American, b. g. c., complete. 20" Hendey triction, (3). 16" Smith & Mills, back grd. crank.

22"x22"x 5' Putnam planers, (2). 24"x24"x5' Cincinnati, one head. **BUTT AND SPOT WELDERS**

Woodward & Powell, 30"x30"x10" three heads.

48"x48"x12' Gray, three heads.

72"x72"x26' Fitchburg, four heads.

No. 1 LeBlond cutter grinder. J. B. Point "Yankee" drill grinders,

No. 11 Brown & Sharpepl, grinders, Plain emery wh'l stand with column.

No. 1 Woods cutter and reamer

complete, new, (2). Type "DE" Hisey-Wolf internal.

No. 118 Federal Junior spot welder, 220 volt. 3 phase, 60 cycle, new. CENTERING MACHINES

Centering machines, single spindle Cadillac. (2).

GRINDERS No. 6-A Bryant internal. No. 1 Brown & Sharpe universal.

No. 3 Brown & Sharpe universal. No. 1 Bath universal. No. 13 B. & S. univ. and tool, (2) No. 3 Diamond wet tool grinder with

drop apron, new. No. 4 Diamond wet tool grinders with drop apron, new, (2). No. 10 Brown & Sharpe plain

No. 14-30" B. & S. plain cyl., (2). No. 14-48" B. & S. plain, (2). 6"x30" Norton plain, (2). No. 24 Landis plain.

Abrasive surface grinder with magnetic chuck, generator and demagnetizer

8" Heald rotary surface grinder with magnetic chuck.

No. 1 Woods cutter and reamer grinder, complete, new. No. 2 Woods cutter and reamer grinder, complete, new. No. 2 Woods cutter and reamer

grinder, complete, new.
20" Whitney wet tool grinders, complete with countershaft, new. (2). C3A Grand Rapids duplex drill grinders with wet att., new, (2).

MISCELLANEOUS Bolt cutter, 12" National 2-spindle, with Landis heads.

Boring mill, 52" Bullard vertical, two swivel heads. Boring mill, 30" Bullard vert., 1 hd. Boring mill, 72" Niles vertical, two

swivel heads, Broach, No. 2 double Lapointe.

iling machine, No. 2 Cochrane-Bly. Marking machine, Etchograph, Oil extractor, No. 150 Curtis. Pipe machine, 8" Jarecki, No. 88. Pipe machine, 4" Oster. Profiler, No. 12, 2-spdl. P. & W. vert. Scleroscopes, Shore, (4).

Cleveland, Ohio; Detroit, Michigan

LOOK—THESE—OVER

LATHES

19"x10' LeBlond, q. c. g. 38"x25' American, geared head. 26"x14' American, l. c. g. 46"x17' New Haven, triple geared. 16"x 6' Lodge & Shipley, q. c. g. 16"x10' Cincinnati, q. c. 16"x 6' Hendey, q. c. g. 18"x 8' Reed-Prentice grd. hd.

MILLING MACHINES

No. 2 Cincinnati universal. No. 14 American plain, No. 3 Brown & Sharpe plain, (2). No. 3 LeBlond plain. No. 3 Cincinnati plain. No. 5 LeBlond plain, motor drive. No. 12 Brown & Sharpe, plain. No. 3 B. & S. vert., s, p. drive.

RADIALS AND DRILL PRESSES

24" Hoefer, stationary head. 3' Bickford, cone drive. 4' Fosdick, s. p. drive. 4' Bickford plain, cone drive. 24" Aurora, sliding head. 26" Hoefer, stationary head.

6' Dreses, motor drive. 1 and 2 spindle Allen, b. b. sensitive.

PUNCH PRESSES

No. 16 Bliss, o. b. inclinable, No. 22 Consolidated, o. b. inc. No. 5 Etna, o. b. inc., 3" stroke. No. B Long & Allstatter, 18" thr. No. 6 Whiting, single end, 12" thrt. No. 3 Bliss dble. crk., 36" bet. hous. No. 21 Michigan horn press.
No. 22 V. & O., open back inclin.
No. 34 Toledo, stiff back.
No. 31 Toledo, stiff back. No. 6 Waterbury-Farrel, stiff back. No. 14 Bliss toggle draw, press. No. 104 Badger Punch and Shear. No. 64 Consolidated s. s., 18" bet.

No. 17 Williams & White, 24" thr.

No. 63 Consolidated s. s., 14" bet. PLANERS AND SHAPERS

24"x 6' Powell, I head. 30"x 8' Cincinnati, I head. 48"x36"x12' Cincinnati, 2 heads. 24" Kelley sharer

24" Kelley shaper, b. g. 20" Cincinnati shaper, b. g.

No. 60 Heald, long table, (2). No. 60 Heald, short table. No. 6 Gardner double disc, b. b. No. 2 Brown & S. surface grinder. No. 2 Diamond 12x36 surface grind. 17" Smith & Mills, b. g. 16" Smith & Mills, cone drive. 16" Ohio, b. g. shaper. 16" Rockford, b. g. shapers. 16" Gould & Eberhardt shaper.

GRINDERS

No. 1 Wells, tool and cutter grinder. No. 1 Cincinnati, t. and c. grinder. No. 3 Ohio univ., t. and c. grinder. No. 23 Landis, 16x42" 16x66 Queen City plain.

MISCELLANEOUS

Bolt cutters, 24. 13" & 1" Acme. Boring mill, 30" Bullard, cone drive, turret head. Boring mill, 36" Gisholt turret head, cone drive.

Boring mill, 42" Bullard vertical.
Boring mill, fosdick 3" horizontal.
Boring mill, 19' Niles, 2 heads.
Brake, hand, 10' Robinson, 16 gauge. Chain hoists, various sizes Hammer, steam, 800 lb. Niles,

Gear cutter, No. 13 B. & S., spur & bevel. Millers, hand, (6). Presses, 30 & 50 ton Lucas forcing. Press, 44" Wood hydraulic tire press. Press, 44 Wood hydraunt fire; Shear, 66" power square, 14 gauge. Slotter, 10" Niles vertical. Tooth rounder, 12" Ingle. Turret lathe, No. 1B Foster univ. Turret lathe, No. 2 W. & S. (2).

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24" Weigel Drill Press.

Fellows Gear Shapers.

No. 6 Foster Screw Machines.

2 No. 4 Southworth Screw Machines.

1 No. 4 J. N. LaPointe Broach and Extension.

No. 3 Landis Universal Grinder 16x36.

14x50 Norton Plain Grinder.

12x96 Landis Plain Grinder. 26"x26"x8' E. C. Pease Planer.

20"x20"x8" E. C. Pease Planer.

61 Niles Radial Drill.

Webster & Perks Universal Grinder.

101/2 Bardons & Oliver Turret Lathe.

Bryant Internal Grinder.

6° Gleason Generators.
No. 2 Warner & Swasey Hand Screw Machine.

No. 2 Leisy Patton Hand Screw Machines.

No. 2 LaPointe Broach, 2-spindle.

American High Pressure Blower.

6x15 Fitchburg Grinder.

Tilted Metal Cutting Band Saw.
 National Bolt Cutter.

4" Acme Bolt Cutter, 41/2" capacity.

Warner & Swasey Knee Type Boring Mill.

1 20"x14" F. E. Reed Screw Cutting Engine Lathe. 1 S. W. Putnam (Fitchburg) 44"x45" triple gear

Engine Lathe, 11 H. P. motor.

Cordesman Iron Tilting Top Saw Table. 12th Cincinnati Manufacturing Miller.

3/xx84 Fitchburg Lo-swing Lathe.

Curtis Oil Separator and Hoist.
 32"x12" Pittsburgh Screw Cutting Engine Lathes.

1 14°x6' Hendey Lathe.

18º Cincinnati Miller, 95% new.

1 Cincinnati Tool and Cutter Grinder.

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Good Tools—Priced Right

No. 3 Baush High Speed Multiple Spindle Drill, 20 x 40 rectangular head;	
ten spindles 1¾ . Condition good 28 Barnes Sliding Head, tapping attach., comp. table. Condition good	\$100
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Wilmarth & Morman Twist Drill Grinder, motor drive, capacity 1/2" to 31/2".	
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N 100 C Culti-Contained Universal, Condition fair	150
No. 190 Greenfield Universal Cutter and Tool. Condition good No. 5 Oliver Twist Drill, motor drive, capacity ¼ to 2¾. Like new	450
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6°x32° Norton Plain Grinder. Condition good No. 10 Brown & Sharpe Plain Grinder, 6°x20°. Condition good	125
No. 11 Lumsden Plain Ball Bearing, with cup wheel. New	275
	213
MILLERS	
No. 6 Whitney Hand Miller. Condition good	\$150
No. 10 Pratt & Whitney Hand Miller	150
No. 3H LeBlond Plain Cone Type Miller Like new	1300
No. 0 Brown & Sharpe Plain Miller, Condition good	300
No. 01/2 LeBlond Plain Miller	400
No. 33 Kempamith—Lincoln Type—Miller	750
No. 0½ LeBlond Plain Miller No. 33 Kempamith—Lincoln Type—Miller No. 32 Kempamith Miller. Condition good	350
Taft-Pierce Thread Miller Briggs Type A Miller, 16" table feed. Condition good	400
Briggs Type A Miller, 16" table feed. Condition good	250
SAWS	
	\$600
20 [®] Silver Belt Drive Band Saw	65
6º Napier Metal Band Saw	150
TURRET LATHES AND SCREW MACHINES	
	\$175
No. 3 Warner & Swasey Plain Head Screw Machine Defiance Hand Screw Machine 16" swing, pan bed, friction head	350
Denance Fland Screw Wachine 10° swing, pan bed, friction head	100
Plain Head Screw Machine, pan bed, automatic chuck No. 6 Brown & Sharpe Turret Screw Mche. with roll fd. Condition good	800
No. 2 Warner & Swasey Hollow Hex. Srew Machine	400
1°x15° Pratt & Whitney Turret Screw Machine, Condition good	500.
No. 3 Forty Toront Labor Condition and	300.
No. 3 Foster Turret Lathe. Condition good	300.
	300.
MISCELLANEOUS	
LaPointe (Hudson Mass.) Broaching Machine, with 2" diameter screw	
48* long. Condition good. 4* Hurlburt-Rogers Cone Type Cutting-Off Mehe. Condition very good.	\$300.
4" Hurlburt-Rogers Cone Type Cutting-Off Mche. Condition very good.	250.
No. 425 Standard Fuel and Engineering Company High Speed Furnace,	
with heating space 9"x14"	75.
24 G. & E. Gear Hobber. Cap. 24 x 10 x 5 , 6-pitch. Condition fair.	325.
18" Gleason Bevel Gear Generator. Condition good	800.
No. 6 Fellows Gear Shaper No. 5 Williams-White Drop Hammer. Weight of ram 600 lb No. 1 Gray Sheet Metal Cutter, cap. 3/16*; depth of throat 34*. Like new	500.
No. 5 Williams-White Drop Hammer, Weight of ram 600 lb	350.
No. I Gray Sheet Metal Cutter, cap. 3/16"; depth of throat 34". Like new	400.
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48"x40" Pond h. d., triple geared. 42"x22' American geared head, q. c. 36"x30' American geared head, q. c. 36"x20' Niles h. d. triple geared.

30°x20° Piles n. d. tipe gents. 30°x12° Bridgeford grd. hd., q. c. 21°x12° LeBlond h. d., q. c. 20°x10° Davis, h. d., q. c. 16°x10° Hendey q. c. 16°x10° LeBlad q. c.

19°x 10' LeBlond q. c. production.

MILLERS

No. 3 Brown & Sharpe vertical. No. 5-C Becker vertical. No. 5-D Becker vertical. No. 1 Newton vertical. No. 7-H Becker Lincoln type. No. 2½ Hendey Lincoln type. No. 2A Milwaukee plain. No. 3 Milwaukee plain. No. 21 Garvin plain. No. 20 Oesterlein plain.

No. 25 Oesterlein universal. No. 29 Oesterlein universal. 24"x24"x121 Ingersoll horiz, slab.

GRINDERS

16°x66° Landis universal. 10°x48° Landis universal. 16°x36° Landis universal. 16°x68° Landis crankshaft. 12°x36° Fitchburg cylindrical. No. 60 Heald cylinder. No. 2 Gisholt universal tool. Yankee drill grinder. No. 3 Diamond wet tool.

No. E-57 Ferracute 2½ stroke. No. 58 Toledo, double geared, 4 str. No. 75½ Blus trimming. No. 4 Pratt & Whitney trimming. No. 5 Crosby Stiles type. No. 6 American Can inclinable. No. 4 R. & K inclinable.

No. 2 L. & A, Style A forming press

12'-100 ton pressure.

PLANERS

60"x60"x18" Pond 2-heads. 48"x48"x18" New Haven 1-head. 46"x46"x16" New Haven 1-h 48"x48"x 8" Sellers 1-head. 30"x30"x 6" Gray 1-head. 24"x24"x 8" Gleason 1-head. 22"x22"x 5" Gray, 1-head. F2 Newton planer centers. F1 Newton Planer centers.

SHEARS

30° M. & H. guillotine, cap. 6°x6°. 48° Lewis gate, cap. 14°. 6' Lennox rotary, cap. 4°. 30° Bethlehem rotary, cap. 4°. 24° thrt. Morgan dbl. end, cap. 1°. No. 7 United alligator, cap. 6°x6°. No. 2 Carlin alligator, cap. 5°x5°.

HAMMERS 6000 lb. Chambersburg d. f. ateam. 4000 lb. Niles d. f. steam. 2500 lb, Chambersburg d. f. steam. 2000 lb, Chambersburg d. f. steam.

4000 lb. Niles s. f. steam. 1500 lb. Niles s. f. steam. 800 lb. Niles s. f. steam. 3000 lb. Bliss board drop. 2500 lb. Bliss board drop.

2000 lb. Bliss board drop. 1000 lb. Union board drop. 800 lb. Union board drop. 400 lb. P. & W. board drop. 80 lb. Bradley helve cushion.

MISCELLANEOUS

No. 7 Ajax bulldozer. No. 6 Ajax bulldozer. No. 4-B W. & W. bulldozer. 2⁸ National d. h. bolt cutter. 6⁸ Bignall & Keeler pipe mche. 1 National washer machine. 2* National washer machine. 668 Allen air riveter.

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10 ton Morgan electric crane, 73¹.

10 ton Shaw electric crane 65¹.

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14°x 6' Whitcomb-Blaisdell. 22"x10" Davis, d. b. g., q. c. 14"x 8" Fay & Scott, taper. 18"x 8" Lodge & S., grd. head, 20"x 8" Hamilton, dbl. b. g. 20"x10" American, grd. hd., q. e. 32 x 10' Pond pl. change, cheap. 34 x 10 Putnam, plain change. 38 x 14' Fifield, heavy pattern.

MILLING MACHINES No. 3H LeBlond, pl. vert. attach. No. 3 Kempemith pl., ex. cond.

No. 2B Brown & Sharpe hvy., pl. No. 25 Becker, plain, (3). No. 20 Oesterlein, plain. No. 3 Cincinnati vert., high pwr.

No. 2 Cincinnati univ., vert. and rack cutting attachment. Nos. 3, 5 & 6 Becker verticals. No. 8 Hendey hvy., Lincoln type. No. 3½ Pratt & W. duplex. No. 3 P. & W. die sinker.

1

SHAPERS AND PLANERS

30°x 8' Ohio heavy planer. 36°x15' Betts planer, 2 heads. 60°x12' Niles planer, 2 heads. 72°x25' Bement, 3 heads, cheap. DRILLS

24º Milwaukee, b. g., New. 28º Hamilton, b. g.

20° Rockford, b. g. shaper. 20° Kelly b. g. shaper, New 26°x 6' Pond planer, I head. 30°x10' Pond planer, I head.

24° Foote-Burt, heavy duty. No. 32 Michigan solid back. No. 93 Consolidated solid back.

PRESSES

No. 2 Foote-Burt, 4-sp. gang drill. No. 513 Baker, 5⁸ cap. No. 55 Adriance dbl. crank.

16 Reliance bolt cutter, ex. cond. 4º Saunders pipe machine.

BOLT AND PIPE THREADERS 31/2" & 4" Acme bolt cutters.

36" Dreses radial, plain.

SCREW MACHINES % - % Cleve. Auto. ser. 30000, dbl. cross slides (5). No. 1 Garvin hand, % capacity. No. 3 Superior hand, 1-5 16 . No. 4 Milholland, 1 % . 1 % Kent Owen, grd. fr. head. 21" Libby Turret Lathe, 41/4" hole,

6"x32" Norton plain. 14"x72" Norton plain. 16"x96" Landis plain. No. 85 Heald internal

No. 6 Foster, grd. fr. head.

2" Cleveland model A, ex. cond.

Several %" Cleveland and Hartford automatics, cheap. No. 1 Warner & Swasey, 56° cap. GRINDERS 16"x48" Landis, crankshaft.

29 x96 Landie, crank. P. & W. vertical surface grinder. No. 3½ Van Norman auto. ball race. MISCELLANEOUS

Boring mill, 36" Niles, 2 heads. Boring mill, Binsse horizontal. Keyseater, No. 0 Mitts & Merrill. Punch, No. 5 Long & Allstatter. Punch, Badger I in I. 11 thrt. Riveter, %" Grant spinner.

Riveter, 3A High Speed Hammer. Screw machine, 5½ Cleveland auto., erial 28000, fine cond. Slotter, 15" Dill. Turret lathe, 21" Gisholt. Upsetter, 2" Ajax,

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BORING MILLS:	30* Colburn Vertical
	42" Bullard Vertical. 850. Niles Horizontal Boring, Drilling and Milling Machine, 5" dia, bar.
DRILLS:	12* Cincinnati Hi-speed. 24* Weigel B. G. \$350. 24* Sibley B. G. \$354.
LATHES:	18 ⁴ x 8 ¹ 6 ¹ Prentice. 18 ⁴ x 8 ¹ Pratt & Whitney. 24 ⁸ x 10 ¹ Putnam t. a. 24 ⁸ x 12 ¹ Reed, h. s. 24 ⁸ x 12 ¹ New Haven. 26 ⁸ x 12 ¹ Bridgeford Heavy Duty. 26 ⁸ x 16 ¹ Prentice typer attachment. 36 ⁸ x 17 ¹ Gleason Triple Geared. 24 ⁸ Libby Turret.
	24°x6¹ Gisholt Turret, 6¼° hol. spdl
MILLING MCHES.:	No. 2M Cincinnati Plain. No. 2 Kempsmith Plain.
PUNCH & SHEAR:	Canedy-Otto, hand power, ½*z½*\$ 45. No. 5 Long & A., d. e., 10* throats, cap. ½* thru ½*. No. 45 Buffalo S. E. Punch & Shear. Long & Allstatter, 12* throat, s. e. Canton No. 5 Alligator, high knife.
GRINDERS:	No. 1 Wilmarth & Morman Surface. No. 55 Heald Internal. No. 96 Ott Pinton. Bridgeport Knife & Drill.
SHAPERS:	28 ^a Ohio Double Geared
MISCELLANEOUS:	Air Compressor, Chicago 12x14, cap. 275 cu. ft. Blower, No. 2 Roots Rotary. Bulldozer, No. 2 Williams-White.
	Grane, Panama Portable, 2/g. ton
	Saw, Sterling Hack, cap. 9"x9".

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NEW 3 PHASE MOTORS CHEAP. 3 H. P. \$54.50; 5 H. P. \$65.50

LATHES 12"x 5' Cleveland, geared head, 14"x 6' Carroll-Jamieson, new, q. c. 14"x 6' Carroll-Jamieson, new, q.c. d'"x 6' Hamilton, grd. hd., motor dr. 14"x 6' Monarch, quick change. 14"x 8' Sidney, double back geared. 14"x 6' Hamilton, style B. 16"X 6' Monarch, motor drive. 16"x 8' Sidney, double back geared.

Acme "cap., wire feed column. No. 4 Defiance, 11" capacity. " capacity Smurr & Kamen.

SHAPERS

DRILLS and

14" Niles, traveling head. 14" Steptoe, crank. 16" American tool room. 16" O. & S., b. grd., new, low price.

No. 10 and No. 15 Excelsior, foot. Nos. 5 and 6 Toledo, o. b. i. Nos. 3-A & 5-A Willard inclinable.

3' W. E. Gang plain. No. 1 Baush multiple. 4' Plain Universal Radial Drill Co. Electric Drills, Black & Decker. No. 4 Duntley electric

No. 1 Kempsmith universal, new, No. 2 Kempsmith plain. No. 3 Kempsmith plain, new. No. 3 Cincinnati universal. No. 5-C Becker, vertical.

Nos. 1 & 78 W. & M. surface. 6"x15" Fitchburg plain. 10"x36" Landis plain cylindrical. 12"x36" Cincinnati universal. 16"x42" Landis universal. 36" and 66" Yates plate. No. 70 Heald internal,

Band saw, Clark, compound. Band saws, Napier 4"x4", 10"x10" Bending rolls, 7' for 1" plate. Blower, positive pressure, Leiman style "F." Boring mill, Colburn No. 3, tur. hd. Boring mill, 50" car wheel. Brake, 10', 18-gauge metal. brake, 10, 10-gauge metal. Broaching mchs., 1 and 3 LaPointe. Compressors, 68,8 8x8 and 9x8. Drawing tables, adjust., 42"x6" top. Gear cutter, No. 3—26 B. & S. Gear miller. Bilton No. 1. Hammer, No. 1 Pettingell.

18"x10' American, quick change. 20"x 8' American, geared head. 20"x10' Hamilton, rapid production. 20"x10' Prentice, taper attachment. 22"x10' Greaves & Klusman. 44"x12' Bradford. 44"x12' Prentice, with raising block. 8x60" & 34x60' Fitchburg, Lo-Swing. TURRET LATHES and SCREW MACHINES

2x24 and 3x36 J. & L. No. 1 Foster, 15/16" capacity, (2). Warner & Swasey No. 2. No. 52 National Acme.

16" American back geared crank. 16" Cincinnati b. g., motor drive. 16" Barker back geared crank. 24" O. & S. back geared crank. PRESSES

Nos. 14, 2, 24 & 4 Robinson, new. Emco, bench, for radio parts. Perkins, dbl. housing, wt. 4,000 lbs. RADIALS "and 32", sliding hd.

22", 24", 26", 28 6' Ceiling drill. 4-spindle Reed sensitive. 44" Stover. Hole Hog, No. 66-D, 7-spindle.

MILLING MACHINES No. 25 Becker plain, power feed. No. 2 H Brown & Sharpe plain.

Oesterlein 24x7\(\frac{1}{2}\text{x18 plain.}\)
Briggs "A" high duty, 24x8" table.
No. 7 Becker, Lincoln type. GRINDERS No. 60 Heald cylinder

chmitt cylinder grinder. No. 3 Ohio universal, tool and cut. J B X, W. & M. tool and cutter. No. 10 Besly 18" double disc. No. 20 Bryant, chucking. Capital internal, new, 2"x2" cap. MISCELLANEOUS

Hammer, 150 lb. Standard drop. Pipe machines, 2", 4" & 6". Pumps, Gould triplex, 61x8". Punch & shear, 1x1x10" throat. Riveting hammers, High Sp Nos. 2, 3, 4 & 5-A. Scale, 1500 lb. Toledo, dial type. Sceleroscope, Shore type C. hammers, High Speed Sceieroscone, Shore type C.
Shear, 80° Peck, Stow & W., 18 ga.
Shear, No. 362 Robinson.
Shear, No. 20 Quickwork, 30" throat,
Shear, circular, Pettingell, 60" thrt.
Tapping machine, Acme 8-spindle.
Threading mche., W. & P. 2-spindle.

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MONEY BACK GUARANTEE TESTED BEFORE SHIPMENT

Lathes.

5-10x5 Pratt-Whitney tool room. 3-14x6 American heavy duty, 3-14x6 Hendey, tool room.

1-18% Hendey, tool room. 1-18% Hendey tool room. 2-18x8 Greaves-Klusman grd hd.

g.

1-18x8 Lodge-Shipley heavy duty. 1-18x8 Lodge-Shipley heavy duty. 1-18-36x12' Rahn-Larmon Gap. 1-20-42x6' Fay Scott Gap.

1-25x12 LeBlond heavy duty. 1-25x22 Boye-Emmes motor drive. 1-27x18' LeBlond heavy duty.

2-30x12 American geared head.

1-30-60x12' McCabe 2 in 1. 1-30x14 Lodge-Shipley, cone drive. 1-30x20 Pond triple geared.

1-36x29 American geared head. 1-36x70 American geared head.

2-36x20 American geared head. 1-36x60 Bridgeford Boring. 1-42" Niles-B - Pond Car Wheel.

1-42x22 American geared head. 8-42x39 Putnam geared head. 1-44x34 Pond triple geared

2-48x36 Pittsburgh motor drive. 2-50x36 Pittsburgh geared head. 2-54x34 Bement triple geared.

-60x35 Bement triple geared. 1-72x56 N.-B.-P. obl.carriage, n. d.

Screw Machines

1-26" Libby Turret Lathe. 1-No. 3A Warner-Swasey Turret. 3-No. 2 Warner-Swasey screw. 5-2x24 Pratt & Whitney Turrets. 5-18" Libby Turret Lathes. 2-24" Gisholt Turret Lathes. 1-34" Gisholt Turret.

Planers

1-72x72x16' D.& H. Openside, 3 hds. 1—72x;2x16 D. & H. Upenside, 3 Ind. 1—60x50x25° D. & H. Openside, 1—62x62x14° Cincinnati m. d., 4 Inds. 1—56x36x20° Woodward-P., 4 Inds. 1—56x36x12° N. B.-P., 4 Inds. 4—50x30x12° N. B.-P., 4 Inds. 4—50x30x12° N. B.-P. 2 Inds. 4—50x30x12° N. B.-P. 2 Inds. 6-24x24x10' Whitcomb-Blaisdell. 1-24x24x6' Whitcomb-Blaisdell. 1-24x24x6' Powell Hi-Speed.

Millers

No. 5 Cincinnati high power pl. No. 4 Cincinnati high power pl. No. 4-G LeBlond plain.

No. 3 Cincinnati high power pl. No. 3-H LeBlond plain. No. 2 Cincinnati high power pl. No. 1 Brown & Sharpe univ.

No. 1 Brown & Sharpe univ. Mo. 2-A Garvin universal. No. 2 Cincinnati universal. No. 5 Kempsmith universal. No. 5 Brown & Sharpe vertical. No. 5 Cincinnati vertical. No. 6 Cincinnati vertical. No. 2 Cincinnati vertical.

No. 21-B Milwaukee vertical. Nos. 20 & 22 Garvin vertical. No. 14 Cochrane & Bly duplex.

Shapers 1-28" Queen City. 2-24" Gould-Eberhardt.

-20" American. -20" Ohio.

-16" Smith-Mills, 2-15" Potter-Johnston.

Miscellaneous Acme Bolt Cutter.

-3" Achie Bott Cutter.

8" Bignall-Keeler Pipe Machine.

Imperial Type XB Air Compr.

No. 3 LaPointe Double Broach.

-No. 3 Pratt-Whitney Die Sinker. 5-6" Gleason Gear Generators. 9-18" Gleason Gear Generators -5-A Lees-Bradner Gear Hobber.

-No. 13 Brown-S. Gear Cutter. -No. 13-H Brown-S. Gear Cutter. -No. 12 Barber-Colman Hobber. -No. 12 Barber-Colman Hobber. -No. 4-B Nazel Air Hammer. -No. 5-B Nazel Air Hammer. -80-lb. Bradley Helve Hammers.

-300-lb. Bradley Helve Hammer. -800-lb. Morgan Steam Hammer.

-3.500-lb. Niles Steam Drop. -No. 1-A Airco Oxagraph Mche. -5-ton Wern Rotator.

1—5-ton Wern Kotator.
50—20-in. Cincinnat Rotary Tables.
1—No. 2 BG Garvin Tapper.
1—4" Alax Steel Beg Upsetter.
1—2" Acme Upsetter.
1—No. 77 Bliss Geared Press.
1—No. 55 DDG Ferracute Press.
1—No. 57 Bliss Press.

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BARGAINS

LATHES

- LATHES

 1—86".48" x18" Johnston.
 1—31".23" Le Blond.
 4—38".23" Pittsburgh Geared Hd.
 1—32" x12" L. & S. Sel. Hd.
 22" x12" L. Le Blond.
 21" x12" Le Blond.
 1—31" x12" Le Blond.
 1—31" x12" Le Blond.
 1—31" x12" Keed Prentice Grd. Hd.
 9—31" x11" Cisco.
 10—21" x10" Le Blond.
 1—20" x16" American Geared Head.
 2—20" x 8" Le Blond.
 1—16" x 8" American Gd. Hd.
 1—16" x 8" American Gd. Hd.
 1—16" x 6" Walcott.
 2—14" x 8" Carroll-Jamieson.
 2—14" x 6" Carroll-Jamieson.

MILLERS

- 2-No. 6 Becker Vertical.
- -No. 5-C Becker Vertical. -No. 3 Brown & Sharpe Vert.
- -No. 2B Milwaukee Vertical.

- I-No. 3-B Milwaukee.
 I-No. 4-B Becker Vertical,
 3-No. 3 Kempsmith Plain.
 I-No. 2-B Hvy. Brown & Sharpe.

- 1-No. 2 Cincinnati Plain.
 1-No. 3-B Milwaukee Universal.
 1-No. 2-B Milwaukee Universal.
- 1-No. 2 Cincinnati Universal.
- 1-No. 33 Kempsmith.

PLANERS

- 1-72"x56"x36' Cincinnati. 1-60"x48"x30' Hamilton. 1-42"x42"x22' Niles-Bement-Pond.
- 1-47 x42"x22" Niles-Bement-Pc 3-36"x36"x18" Cincinnati. 1-36"x36"x12" Woodward & P. 1-36"x36"x12" Gray. 1-36"x30"x14" N. B. P. 1-30"x39"x 8' N. B. P.

PRESSES

- 1-96-G Toledo Double Crank.
- 2-No. 56 Ferracute.
- 1-No. 164 Toledo Toggle.

BORING MILLS-Vertical

- 5-72" Gisholt.
- 1-72" Cincinnati. 1-36" Bullard New Era.
- 1-30" Bullard. 1-34" Bullard Rapid Production.

BORING MILLS-Herizontal

- 1-No. 12 Beaman & Smith. 1-No. 12 Giddings & Lewis.
- 5-No. 1 Barrett.
- 6-2" Bar Rockford.

DRILL PRESSES

- I-No. 30 Natco.
- 1-No. 310 Baker
- 1-No. 24 Foote-Burt. 1-22" Barnes all geared. 1-20" Leland-Gifford.
- 4-No. 1-K 8" Henry & Wright.

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30°x 20' Fitchburg.
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18'x 8' LeBlond, d. b. g., q. c. g.
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No. 3 Cincinnati, plain.
O. Y. Brown & Sharpe plain.
No. 4 Cincinnati vertical.
No. 2 Cincinnati vertical.
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Full Universal Portable Radial. SHAPERS

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\$200., our price \$125.

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18*x12* Lodge & Shipley q. c., taper attach, draw-in chuck, pan bed.
20*x8* Monarch, d. b. g., q. c.

16 xb Prentice geared hd., motor dr., 20 xb Monarch, d. b. g., q. c. taper attachment and pan bed. 26 x 10 Bridgeford, d. b. g., q.c., t. att. No. 20 Van Norman duplex univ. hds., b. c. Cincinnati plain. etc. Used less than 30 days. Factory No. 3 Cincinnati plain.

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La Salle Tool Company

Ottawa, La Salle County, Illinois

Formerly of La Salle, Ill.

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New Britain, Connecticut

